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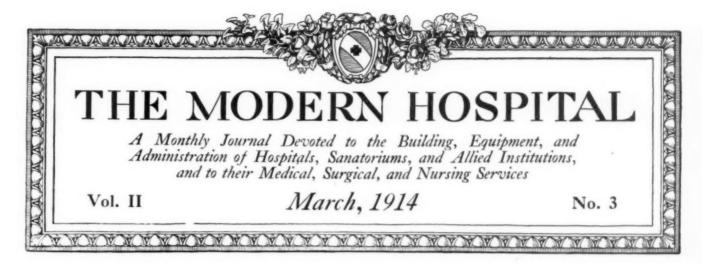
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DIVIDING LINE BETWEEN GENERAL HOSPITAL AND HOSPITAL FOR INSANE.

Terms "Insane" and "Insanity" No Longer Serviceable — Many Mental Diseases Difficult to Distinguish From Purely Physical, Some Are Physical, and Arrangements for Their Treatment in General Hospitals Should Be Made—Some Borderland Cases.

BY WILLIAM A. WHITE, M. D.,

SUPERINTENDENT GOVERNMENT HOSPITAL FOR THE INSANE, WASHINGTON, D. C.

THE title at the head of this article is used simply because it comports with present-day usages and attracts attention to the problemwhich, in a few words, I shall discuss—as it is generally understood. To begin with, however, I am constrained to say that "hospitals for the insane" is a misnomer, and it is time that the word "insane" and the word "hospital" should part company permanently. If the word insanity has in the past been used in an effort to express a medical concept, such use has been mistaken. The word "insanity" has no place in medical terminology-it is strictly a legal and a sociological concept. The insane are so called only in the law. They are a group of the body social who are unable to get along, and it is in many instances merely an accident whether they are stamped with the legal term of insane, pauper, criminal, defective, or what not. Insanity, therefore, is a word used for the purpose of designating vaguely a certain type of social lack of adaptation and certain kind of conduct which renders the individual incapable of getting along in the community.

Now, as a matter of fact, the so-called insane are mentally diseased, but, as will be inferred from what has already been said, mental disease and that type of social lack of adaptation to which the law has applied the term insanity are by no means coequal. All of the so-called insane are suffering from mental disease, but there are many persons suffering from mental disease who get along efficiently in the community, and who are not insane and could not be so designated, while there are large numbers of persons who come

within the purview of some other group of officials than those that have to do with the state hospitals, and are therefore designated as something else, who could equally be called insane if their path had led in a little different direction. For example, a large number of the so-called criminals are so merely by accident, and, if they had not happened to have done something which ran counter to a statute, their path would in all probability have led to a hospital for the insane. The same may be said of various other classes who have to be cared for by the public.

It will thus be seen that the problem of mental disease is a large one and far-reaching. It is a problem which has never been adequately attacked from the standpoint of preventive medicine, and yet it is one which economically is of the greatest importance, because no class of people in the community probably cost more in dollars and cents to care for than the so-called insane. As it is at present, however, mental disease goes practically unrecognized, not only so far as our public hospitals are concerned, but so far as a large number of the practitioners of medicine are concerned, and no effort is made to help incipient cases previous to a frank outcrop of symptoms, which makes their incarceration necessary. In fact, these people have no place to go, except in rare instances, where they may get intelligent advice, and so the problem is not recognized until it becomes self-evident, and by that same token until the period has passed when treatment might avail.

These preliminary remarks should make it clear to those who are accustomed to dealing with medi-

cal facts that the existence of mental disease should be recognized in a practical manner by admitting people for advice and treatment to the various institutions conducted by medical charity on the same basis as patients are admitted for treatment for other and, in many instances, much less important maladies. And when I say they should be admitted on the same basis as other patients. I mean that the various legal restrictions and disabilities from which they are now made to suffer before they can get anything like adequate treatment should be removed. As it stands today, the patient who falls down on the street and breaks his leg not only may receive prompt and skillful treatment in a general hospital in the city for the asking, but he is almost taken there willynilly, so little is his disinclination to go considered as a possibility. The person who is suffering, so to speak, from a broken mind, however, has no place to go. The general hospitals would not take him if they could, for they have no means to handle such cases if they did, they have no understanding of nor any interest in the problems involved, and there is nothing left for the patient to do but to seek admission through the tedious and humiliating process of the law, which brands him, in addition to his mental disability, with a legal disability before he is permitted to receive relief. What wonder is it that neither the patient nor the patient's relatives seek for the relief until it is too late? What wonder is it that they should draw back and hesitate to ask when their request is granted with such poor grace?

It is self-evident, therefore, that the mentally sick should be permitted the same rights of treatment for their several illnesses as the physically sick, that they should be accorded the same consideration, and that the hospitals of the various cities should be prepared to receive, care for, and intelligently treat them. The subject of mental medicine, however, is a distinct specialty, and it requires close application and study for years to master its principles, and therefore it is natural that a portion of the hospitals should be set aside for these cases, the wards to be in charge of specially trained psychiatrists just as separate portions of the hospital are set aside for other purposes—medical, surgical, obstetrical, or what not. with their respective specially trained men in the problems involved. This means that somewhere in a city of any considerable size there should be wards specially designed and maintained for the receipt of patients suffering from mental disease. Such wards are usually called psychopathic wards, psychopathic clinics, or psychopathic hospitals. They may be organically connected with the general hospital; they may occupy an isolated position at some distance from the rest of the institution; they may be separate institutions altogether, or they may be constructed separately, but in association with the other buildings of a large general hospital.

Which of the several plans suggested above is the most desirable is almost always a matter which has to be considered on the merits of the local situation. Our American cities, with their rapid patchwork growth, often present problems that make any solution necessarily a compromise. The ideal arrangement, it would seem to me, is for the city to have a municipal hospital located not too near the heart of the city and not too far away to be accessible, but on ground sufficiently extensive, not only for the present purposes of the hospital, but for all reasonable future growth. The plans of such an institution should include a psychopathic ward.

The advantages of such an arrangement are manifold. In the first place, the patient goes primarily to the big municipal hospital; he goes to the medical ward if he has pneumonia, he goes to the surgical ward if he has appendicitis, and he goes to the psychopathic ward if he has mental disease. He feels in this environment the influence of the hospital atmosphere, he is where he belongs, he is in an institution conducted for the care of sick people, and this feeling would be doubly strong if the municipality in its wisdom could be induced to withdraw the disabling legal preliminaries. Then, again, his relatives feel more at peace about him when he is here in this big hospital than they would if he were legally committed to an insane asylum. The municipality is, on the face of it, endeavoring to treat a sick man, and not simply to shut up a crazy one. It is the logical, the humane approach, and not the legal disabling method of turning the back to a disagreeable problem and locking the door.

In addition to the advantages of an arrangement, as described above, for the patient and the patient's relatives, there are other advantages. In the first place, the mental cases throughout the big general hospitals can be taken where they belong, just as, for example, if a woman is brought into the medical ward vomiting, and examination shows that she is pregnant and that the vomiting is the result of her pregnancy, she may be transferred to the obstetrical ward, where she will receive the best care and treatment for the particular condition from which she is suffering; so the mental cases in a general hospital will go to the psychopathic pavilion, where they will receive the best care and treatment. In addition to that, the psychopathic ward, with its corps of trained men, will be at the call of the other departments of the hospital. Every patient in the institution, in addition to the trained advice of physicians and surgeons in all the different departments of medicine, will have added to a list of men, on whom he can draw to help him in case he needs it, a psychiatrist.

This introduction of the psychiatrist into the general hospital is to my mind filled with the greatest possibilities for medicine. We have always met on the medical and surgical wards the neurasthenic and the hysteric, but how rare it has been through the years that most of us have lived to see such cases treated intelligently, not to say sympathetically or understandingly. hysteric and the neurasthenic and such other patent conditions are by no means the only ones where the psychiatrist can be of inestimable service to the internist and the internist can be of inestimable service to the psychiatrist. There is literally a host of conditions that lie on the borderland between internal medicine and psychiatry. To mention one only, there is that immense group of fever deliria, of which every hospital always has innumerable cases at all times. The fever deliria will, no doubt, some day, throw a great deal of light on the function of the higher nervous centers, to say nothing of the possibilities on the organic side. In addition to this immense group of the fever deliria, there are hosts of other cases where internal medicine and psychiatry must needs meet, and the sooner the better. There are, to mention only a few, the traumatic deliria and post-traumatic defect states of various sorts; the post-operative psychoses; psychoses from shock, loss of blood; the group that follow operations on the eye and long confinement in a dark room; that very large group of gastrointestinal cases that have close relationships with the neuroses, which are at present not understood, but which are possibly mediated through the endocrinous glands and the sympathetic nervous system. Then there is the group of pelvic diseases in women. No one who knows anything about the history of medicine in the past generation can doubt but that thousands of ovaries have been removed, not to mention more grave operations, when the disease was not in the pelvis at all, but was in the mind. Then there are the chronic organic nervous conditions, the hemiplegias, with the aphasias, apraxias, and organic deteriorations; and finally the large group of toxic psychoses, among which alcohol plays the greatest part. All of this immense class of cases constitute a proper field for the psychiatrist, and the psychiatrist and the internist working together is the ideal toward which the establishment of the psychopathic ward in a general hospital will lead.

Of the various classes of cases which have been briefly mentioned above, the alcoholic and drug cases should be under the immediate care of the psychiatrist, either in the psychopathic pavilion itself or in an adjoining pavilion under his supervision. The general problem of the alcoholic must necessarily meet its solution in the psychiatrist's hands. It is true that the physical conditions are often most prominent and perhaps require the most intensive treatment. A neuritis of the phrenic nerve, for example, is of course not primarily a matter for the psychiatrist, but, taking the problem as a whole, it belongs in his domain. Patients that are admitted are admitted almost invariably because of some disturbances of conduct. They are either delirious, hallucinated, or deluded in an active way which leads to their arrest, or to apprehensiveness or complaint on the part of some one associated with them. In addition to this, many of them have actually committed some overt act, perhaps homicide, and it is important that when under these circumstances a patient is brought to the hospital he should, at the earliest possible moment, be placed under the observation of those who are trained to deal with mental questions in their legal bearings in connection with the administration of the criminal law.

In addition to all the above, and flowing naturally and inevitably from the conclusions reached, I believe that the general hospital should maintain an out-patient department for the advice and treatment of persons with mental disease. With such a machinery attached to the municipal hospital, there is no reason why all who are afflicted cannot as readily seek aid as those with bodily disease. The details of transfer from the psychopathic ward to the larger state institutions should be made as simple as possible. Transfer should be made effective on a certificate of two properly qualified physicians, and the matter should not have to come into court at all unless it is brought there by the patient, his relatives, or some friends on his behalf. I would not close the courts to the so-called insane by any means, but I would not insist on a legal process, whether the patient wanted it or not; I would not insist, so to speak, on cramming an alleged constitutional right down the patient's throat at the expense of his life. We see today this process of commitment going on where nobody wants it. The patient does not want it, the patient's friends and relatives do not want it, and anybody who stands and watches it proceed recognizes on the face of it that it is a farce. I would, therefore, proceed to the matter of commitment in the simplest way. Leave the courts accessible to the patient if he wants to appeal for relief, and it will be surprising how rare such appeals will be.

In the construction of the psychopathic ward arrangements should be made and equipment provided for all the scientific work which modern science demands in connection with a proper diagnosis and treatment of the cases that the psychopathic ward is called on to deal with, and so far as possible it would be best that additional opportunity should be provided in the way of laboratories, equipment, and fellowships for carrying on original research work. Whether this latter is or is not provided, it is highly desirable that the wards should be constructed with a view to teaching purposes. The material should be made accessible to the medical schools, and it would be the part of wisdom to provide a capacious auditorium in which lectures might be delivered and where patients could be exhibited. Such material coming in from a big city, of all classes and descriptions, large numbers of acute cases, with access to all sorts of borderland conditions, makes an invaluable supply for the purposes of instruction, and if, in addition to the instruction of the medical student, the law student should have to come there and listen to the lectures on mental medicine, we might perhaps work through such an institution the greatest of miracles—a rational set of statutes, with rational methods of legal procedure, where cases of mental diseases are under consideration. Such an institution, so equipped and manned, would also be the rational place for the courts to send prisoners awaiting trial under sentence, or what not, in regard to whom the suspicion of mental disease had arisen. It is my belief that such institutions should take the place of the present method of procedure in criminal cases in which the claim of insanity is raised. Perhaps they should not altogether take their place, but they should practically take their place. In a specific instance in which the question of insanity is under consideration, the prisoner could be sent to the psychopathic ward, held there for observation for a sufficient length of time, and a careful, detailed, and scientific report made to the court upon his case, without any alterations in our present methods of procedure or theory of practice. Such a report would necessarily carry tremendous weight in the decision of the case. I am not altogether in favor of making such a report a legal document in the sense that it would be controlling on the action of the court in any way, but let it go forward with its preponderant weight of authority, and I believe that in the large majority of cases it would carry everything before it.

Such a psychopathic ward as I have described above, adequately equipped and properly officered, with its organic connections with a large municipal hospital, would be a tower of strength in the

community. It would put mental medicine on a scientific basis; it would establish the hospital for the insane in the confidence of the community; it would open its doors to dealing with the mentally ill when they needed help and advice, and when treatment would be beneficial; it would assist the courts in the administration of justice, and it would assist the sick man in getting justice; it would bring mental medicine into closer, more harmonious, and more organic relationships with internal medicine to the mutual advantage of both; it would form a nucleus for scientific research work that could be indefinitely elaborated; and, finally, it could form a center of social endeavor of great beneficence in the community. Not only might it be of value for the social worker, for the scientific eugenist, but it would be the natural center from which would radiate all efforts at popular instruction in matters connected with mental disease. The city that fails in its general hospital scheme to provide for a psychopathic ward loses a golden opportunity.

ETHER EXCLUSIVELY AS ANESTHETIC.

Mayo Anesthetist Finds No Necessity for Gas or Chloroform to Satisfy Her Surgeons.

"Ether, in the hands of a specially trained anesthetist, is safer and more serviceable than nitrous oxid," is the expressed belief of the surgeons in the Mayo clinic, Rochester, Minn., according to Miss Florence Henderson, R. N., anesthetist, who read a paper on this subject before the Southern Minnesota Medical Society recently. Miss Henderson thinks the literature tending to prove the greater safety of nitrous oxid over ether is misleading because the theory has been predicted on the fact that ether has been administered usually by untrained persons, while the gas has always been, and must always be, given by trained experts.

Miss Henderson says her operators like ether because of its wider range of usefulness, because it gives a better relaxation in difficult situations, and she blames many surgeons because they demand too great a relaxation, necessitating the carrying of the anesthetic to a dangerous point. She thinks many anesthetists fail with ether because they do too much rather than too little with the patient. She insists upon anesthetizing the patient in the operating room, because (1) the surgeon is present to see that things are right; (2) if the patient is put to sleep in another room while the surgeon is finishing up a patient in the operating room, someone will have to wait, and it will always be the patient, who is thereby undergoing an unnecessarily long anesthetic: (3) the patient will often vomit while being moved to the operating room because of the momentary let up in the anesthetic during removal.

Vomiting, after the anesthetic, Miss Henderson's surgeons think, is an advantage rather than otherwise, as it helps, by way of the stomach, in the process of elimination and clears the lungs as well as the stomach. Miss Henderson does not go into the choice of the anesthetic in heart and kidney cases, in which some surgeons think ether is contraindicated.

RECENT EXAMPLES OF HOSPITAL CONSTRUCTION IN EUROPE.

A Description of the Hospital and Sanatorium Beelitz, Near Berlin—Careful Attention Given to Details—Effects of the Workingmen's Insurance Act in Germany.

BY DR. WM. PAUL GERHARD, CONSULTING SANITARY EXPERT, NEW YORK.

PAPER I.

DURING several recent trips abroad the writer inspected in a number of German cities some of the latest examples of hospital planning, equipment, and construction. In these articles it is proposed to give a condensed description, illustrated by plans and views, of some of the hospitals visited. Prominent among these were the Hospital and Sanatorium Beelitz, near Berlin; General Hospital at Eppendorff, near Hamburg; Hospital for Insane at Doesen, near Leipsic; Municipal Hospital at Nuremberg; Rudolph Virchow Hospital at Berlin; Hospital Johann-Georgenstadt

Fig. 1. Hospital and Sanatorium Beelitz—General plan of location of buildings.

at Dresden; St. Elizabeth Hospital at Aix-la-Chapelle; Hospital for Insane at Buch, near Berlin; Allgemeines Krankenhaus St. Georg at Hamburg, and others.

HOSPITAL AND SANATORIUM BEELITZ, NEAR BERLIN.

It may not be generally known that throughout the empire of Germany workingmen are compelled by law to pay a percentage of their wages to an insurance bureau, which is managed by officers appointed by the state. In case of sickness the workingmen are entitled to free treatment in spe-

cial hospitals erected in compliance with this law. While certain diseases are excluded, the hospitals receive not only those ill of chronic ailments, but also those suffering from tuberculosis, both male and female patients being admitted. The insurance boards are also authorized to give to the insured prophylactic treatment. About ten years ago the chief office of the National Insurance Institute for Berlin (the Landes-Versicherungsanstalt) conceived the plan to erect a large sanatorium and hospital devoted to the purposes named for both male and female patients. From the first it was contemplated to subdivide this into two parts-namely, a sanatorium, or general hospital, and a special hospital for tuberculosis patients. This meant the concentration of practically four hospitals on a building site. After many preliminary investigations and reports concerning the



Fig. 2. Pavilion for male patients-First floor plan,

character of the soil, the general sanitary conditions, the water supply, drainage, etc., a suitable site was found at Beelitz, near Berlin. One feature of the site selected, which will be evident from the general plan (Fig. 1) is that the building site was divided into four parts by a railroad in one direction and by a highway in the other. The location, in the midst of pine woods, is a favorable one for tuberculosis patients.

The architects selected for the work were Baurat Schmieden and Regierung-Baumeister Boethke. Building operations were begun in the fall of 1898. The architects were assisted by several expert engineers, among them Herr Commerzienrat Henneberg and Baurat Herzberg, the former for the steam and ventilating plant and the latter for the water supply and drainage. Contrary to the practice prevailing in the United States, these advisory engineers also undertook the execution of the contracts for the work. In May, 1902, four years after the purchase of the property, the buildings were completed at a total

cost of 9,000,000 marks, or \$2,250,000. The cost, figured per bed, amounts to \$3,750, which, however, will be reduced when the contemplated additional buildings have been erected. The total annual cost of maintenance, including interest on the capital, amounts to \$300,000. With 600 patients, this would amount to a daily expense per capita of \$1.37.

All the buildings were erected of masonry in the most durable and solid manner, with the best available materials, but with avoidance of all lux-

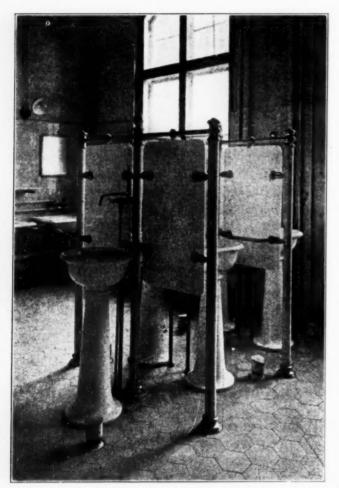


Fig. 3. Pavilion for male patients—Lavatory, with special bowls for mouth gargling.

ury. The ruling principle throughout has been that for the construction and equipment of hospitals the best is the cheapest in the end, because it avoids expensive repairs and the replacing of materials.

DESCRIPTION OF SITE AND PLAN.

The hospital can be reached by an hour's rail-road ride from Berlin. The site purchased comprised 140 hektar (346 acres) of woodland, densely covered with old pine trees. The subsoil is dry and healthful, and the trees afford protection against wind and dust. The road which passes through the hospital ground leads from Potsdam to the small town of Beelitz.

The plan (Fig. 1) shows the two general hospitals for men and women, marked A¹ and A², located southeast of the railroad, the one for men being east of the road and the one for women west of it.

The sanatoriums for tuberculosis patients are located northwest of the railroad, and are divided by the highway, so that the one for men is northeast and the one for women northwest of the railroad. These four parts of the hospital are separated from each other by fences, and each part has its own gate lodge. There is, however, only one kitchen and one laundry building for hospitals A¹ and A², there being another kitchen and laundry for hospitals B¹ and B².

The different buildings are placed so as to get the best possible exposure to the sun, and the patients' buildings are sufficiently remote from the railroad so that the patients are not unduly disturbed by the noise. The chapel and a central bath house are located outside of the fence inclosures, and are intended to be used by patients from all four divisions.

In arranging the buildings connected with the management, an attempt was made to locate all those in which male employees work—such as the boiler and engine house, workshop, disinfecting station, stable, gardener's house, and fire engine house—on the side for male patients; those buildings in which women employees work—like the laundries and kitchens—to be located on the female division. Each of the four subdivisions has one large hospital pavilion, and the four pavilions together contain about 600 beds. It is contemplated, however, to build additional pavilions.

In the plan (Fig. 1) the present structures are drawn in black ink, and future buildings are indicated by lighter lines. In planning the kitchens and laundries, the future enlargement of the hospital was taken into consideration. The sanatorium for men, A¹, contains an administration building, intended for all four subdivisions, and a dwelling house for the medical director, a workshop, boiler and engine house, water tower, railroad siding for coal delivery, two small pump houses, a central bath house, a building with a bowling alley, and a gate lodge. The sanatorium for women, A², contains, besides the large pavilion, a kitchen and a laundry building, and also a separate gate lodge.

The arrangement of the buildings B¹ and B² for tuberculosis patients is similar. These have their own kitchen and laundry building, but of course the engine and boiler house, administration building, pump house, and bowling alley are not duplicated here, their places being taken by the gardener's house, stable, fire engine house,



Fig. 4. Pavilion for male patients-General front view.

and the disinfecting and garbage destruction station. Important accessories, which are only on this side of the hospital, are the open-air pavilions intended for the open-air cure for tuberculosis patients. Nearly all the patients' rooms have a southern outlook.

HOSPITAL PAVILION FOR MEN.

Fig. 2 shows the first floor plan of this building, which is oblong, 146 meters (479 feet) long, with its main front to the south. The building has a second story and an attic; a part of it has a cellar. The majority of day and bed rooms are arranged on the south side and only a few at the east and west. Each story contains two large wash rooms, with one lavatory for each five patients, with special bowls for mouth gargling (Fig. 3), and also two toilet rooms, with waterclosets and urinals. In the central side wing, extending to the north, there is an operating room, bath rooms, massage rooms, and rooms for electrical treatment on each of the floors. The extreme western end contains the large dining hall, with clerestory extending through the second floor. Adjoining the dining room there is a large

pantry, where the dishes brought from the central kitchen are arranged and warmed and also washed. The dining hall is used as an entertainment hall and has a raised stage; there are also several large reading rooms. The building contains rooms for the examining physician and for the head nurses, and has six staircases. This pavilion contains 186 beds, but may be fitted up with 200. A view of the outside of this building is shown in Fig. 4. Fig. 5 shows the interior of the bath room; Fig. 6, interior of the operating room; and Fig. 7, a view of the outside porch.

PAVILION FOR FEMALE PATIENTS.

The floor plan of this pavilion is shown in Fig. 8 and a general view is shown in Fig. 9. The building is considerably smaller than the one for men, and contains 80 beds. Its construction and equipment, however, are very similar to those of the pavilion for male patients. Only a part of the building is provided with a cellar, in which the ventilating ducts, heating stacks, and water supply and drainage pipes are placed.



Fig. 5. Pavilion for male patients-Interior of bath room,

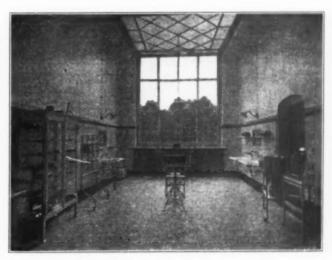


Fig. 6. Pavilion for male patients-Interior of operating room.

The dining room is much smaller than the one for men, and does not contain a stage. A large day room adjoins the dining room on the one side, and on the other side there is a pantry and scullery, and a dining hall for employees. In both stories the required number of toilet, bath and lavatory rooms are provided, including a special room with five bidet fixtures.

HOSPITAL PAVILION FOR MALE TUBERCULOSIS PATIENTS.

The floor plan of this pavilion, shown in Fig. 10, is quite similar to the hospital pavilion for men,



Fig. 7. Pavilion for male patients-Outside porch.

and contains approximately the same number of beds. In view of the fact that hydrotherapeutic treatment is used for many of the tuberculosis patients, the central wing has a number of rooms devoted to this purpose. As will be seen from the plan, the patients are taken to a large dressing room, and from here into either the bath room proper or electric bath division, or into the rest room. Most of these rooms are finished entirely with enameled brick, and even the arched ceilings are so finished. A view of the bath room for men is shown in Fig. 11, and there is a special hydrotherapeutic room.

PAVILION FOR FEMALE TUBERCULOSIS PATIENTS.

A floor plan of this building is shown in Fig. 12. It contains 70 beds besides a few reserve beds. The west wing of this building contains the bath rooms, and a smaller hydrotherapeutic bath room is placed near some of the bed rooms, being intended for those patients who cannot walk to the main bath room.

ENGINE AND BOILER HOUSE.

A view of this house is shown in Fig. 13, the chief feature of this group of buildings being the water tower, containing the elevated water tank. The boiler house contained originally five high-pressure steam boilers, intended for the electric lighting plant and for the supply of hot water to the laundry and kitchen. Subsequently an ad-

ditional boiler room with nine boilers was added, and the two together furnish the steam for the heating of all the buildings. The boiler house contains also rooms for the chief engineer and firemen, workshops for blacksmiths and plumbers, store rooms, wash rooms, and bath and toilet rooms. In the southern end are located the engines and dynamos, plant for the filtration of water, and refrigerating plant. A large battery of accumulators in connection with the lighting plant is located in the cellar. The upper floor contains living rooms for the fireman and machinists.

KITCHEN BUILDING.

The kitchen building, the plan of which is shown in Fig. 14, contains a cellar, two floors, and attic. The center of the ground floor is given up to the large kitchen, which has a clerestory reaching through the second floor. It is arched over and finished entirely with enameled brick. On one side of the kitchen are arranged the store rooms for provisions and the meat refrigerator; on the other side is located a large scullery, pantry for dishes, another pantry for the preparing of the dishes and a dining hall for the employees. The second floor contains rooms for stores and bed rooms for the female employees.

The kitchen building for division A is intended for 400 people and the kitchen building for division B for 600 people. In the latter the equipment of the kitchen consists of the following: one vegetable kettle, one soup kettle, one meat kettle, one potato kettle, one coffee kettle, one milk kettle, two kettles for various foods, one large range with two fire pots and eight ovens,

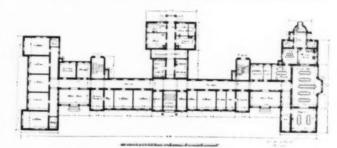


Fig. 8. Pavilion for female patients-Floor plan.

another range for baking, five tipping vessels, one bain-marie, and several sinks.

The cooking vessels are constructed with double walls, the outer one of cast iron and the inner one of pure nickel. The covers of the vessels are counterbalanced by weights and close tightly without rubber packing. The cooking vessels are supplied with steam under seven and one-half pounds pressure.

LAUNDRY BUILDING.

Fig. 15 shows the plan of one of the two laundry buildings, which is about the same size as the



Fig. 9. Pavilion for female patients-General front view.

kitchen building. The ground floor contains the following rooms: receiving and assorting room, soaking room, large wash room, drying room, steam mangle room, ironing room, store room for the wash, repairing room, and room where the wash is delivered. The large wash room contains three cylinder washing machines and two centrifugal wringers. The second story contains rooms for the employees.

BUILDING FOR DISINFECTING PURPOSES AND GARBAGE REFUSE DESTRUCTOR.

The floor plan of this building is shown in Fig. 16. It has the usual subdivision into two sides, one for the articles to be disinfected and the other for the disinfected articles. It also contains a dressing room and a spray bath for the employees. There is also a small room for the keeping of dead bodies, a room for autopsies, and a special room for the refuse destructor or incinerator. This is intended for the destruction by fire of all soiled bandages, of all litter and refuse from the hospital buildings, and of dissected parts of bodies.

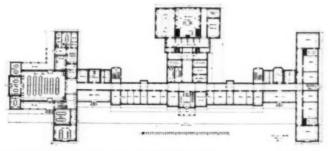


Fig. 10. Pavilion for male tuberculosis patients-Floor plan.

CENTRAL BATH HOUSE.

Notwithstanding the fact that the four pavilions are generously provided with bath rooms and rooms for massage, it was deemed advisable to provide in addition very elaborate bathing installations in a central bath house. This is chiefly intended for hydrotherapeutic treatment—for the giving of medical, steam, electric, sand, moor, and



Fig. 11. Pavilion for male tuberculosis patients—Interior of bath room, with hydrotherapeutic appliances.

sulphur baths. Fig. 17 shows the first floor plan of this building. The various treatments by baths are given on the first floor. The second floor contains a large room for mechano-therapeutic appliances, room for gymnastic exercises, sulphur bath, room with carbonic acid and electrical baths, and a room for special medical baths. This building is very elaborately fitted up with all the

latest appliances and devices for treatment, and is in all respects a model of its kind.

CHAPEL BUILDING.

The chapel building contains room for 200 seats, and is intended for religious services for Protestants and Catholics alike.

ADMINISTRATION BUILDING.

The floor plan of this building is shown in Fig. 18. It is a two-story and attic building, contain-

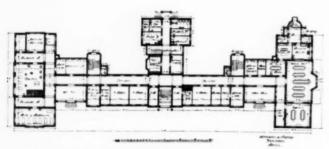


Fig. 12. Pavilion for female tuberculosis patients-Floor plan.

ing on the first floor reception rooms, offices for the management, office for the managing physician, club and reading room for the physicians, and druggist's room; on the upper floors are rooms for the assistant physicians and chief inspector; and in the attic are rooms for some of the male nurses.

The management of the hospital is placed under a board of administrators, with the chief inspector of the Insurance Institute as chairman.



Fig. 13. Engine and boiler house, with water tower-General view.

The medical staff comprises two chief physicians, eight other physicians, two matrons, three chief sisters, seven sisters, and fifteen male attendants or nurses. The other employees comprise 138 persons, of which 61 are employed in connection with the mechanical plant, and 25 or more (at certain seasons) look after the gardens, walks, and grounds.

OPEN-AIR PAVILIONS.

Fig. 19 shows a view of one of the open-air pavilions, which form an important part of the hospital for tuberculosis patients. The men's side contains four such pavilions, each 45 meters (147.6 feet) long and 5.7 meters (18.7 feet) deep, having room for 48 chairs and accommodating together 192 patients. On the woman's side there

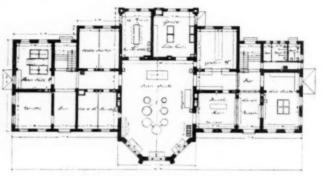


Fig. 14. Kitchen building-Floor plan.

are two pavilions, each containing 40 chairs, and the pavilions are 72 meters (236 feet) long.

BOILER PLANT.

As already mentioned, the boiler plant is placed in two separate but adjoining buildings, intended to contain eventually fourteen boilers. The southern boiler room contains at present five Cornwall boilers and the northern one contains three boilers. There are two boiler chimneys, one being 43 meters (141 feet) high and 1.7 meters (5 feet 6 inches) in diameter at the top, the other one being 45 meters (147.6 feet) high and 2.2 meters (7 feet 3 inches) in diameter at the top. The boiler pressure carried is 120 pounds, and the two groups of boilers are cross-connected. There are



Fig. 15. One of the laundry buildings-Floor plan.

four boiler feed pumps, and the tanks for condensed water are intended as feed-water heaters.

All the steam required in the different buildings for heating and other purposes is generated at this central plant. The longest distance from the boiler house to one of the buildings is 1,250 meters (4,100 feet). The steam pressure is reduced at two points to 97 pounds, and all the

steam mains are carried in large tunnels connecting the various buildings with the boiler house. The tunnels are arranged in the roads, and their top covering, which consists of reinforced concrete, serves at the same time as a sidewalk. The main pipe tunnel is 250 meters (820 feet) long, 2 meters (6 feet 6 inches) wide, and 2.1 meters (7 feet) high. It contains, besides the steam mains, the pipes for hot water and the electric wire conduits. Another main tunnel runs to the hospitals for tuberculosis patients, is 810 meters (2,657 feet) long, and crosses under the railroad.

Duplicate steam mains are provided—one for summer and the other for winter use. The diam-

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Fig. 16. Building for disinfecting and garbage destructor-Floor plan.

eters of the steam mains are respectively 131 and 180 millimeters (5 and 7 inches).

The tunnels are specially well ventilated by means of openings, which also serve as safety exits, the distance between these openings being approximately 80 meters (262 feet). These tunnels are lighted by plates of glass placed in the sidewalks and ceilings of the tunnels at distances of approximately 27 feet, and there are also electric lights in the tunnels.

All steam pipes are covered with nonconducting covering, and all buildings are furnished with steam heat from the central plant. Certain temperatures are stipulated in the specifications. With an outdoor temperature of —20° C. (—40° F.)

the various parts of the building are heated as follows: $+22^{\circ}$ C. ($+72^{\circ}$ F.) for examination rooms, dressing rooms, bath rooms, etc.; $+20^{\circ}$ C. ($+67^{\circ}$ F.) for living and sleeping rooms, dining hall, wash rooms, reading rooms, and lavatories; $+18^{\circ}$ C.

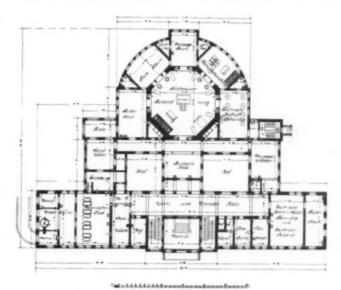


Fig. 17. Central bath house, with hydrotherapeutic appliances—Floor plan.

($^+$ 65° F.) for scullery, pantries, and anterooms; $^+$ 15° C. (about $^+$ 60° F.) for corridors, staircases, vestibules, toilet rooms, laundry rooms, etc. Heating is accomplished by low-pressure steam under one and one-half pounds pressure.

The living, sleeping, and day rooms of the pavilions for tuberculosis patients are not heated by steam, but by warm water, which was considered by the consulting physicians to be the most desirable mode of heating. Warm-water heating is also arranged for the residences of the two medical directors. For this purpose the cellars of these buildings are provided with hot-water boilers, in which the water is heated, not by coal,

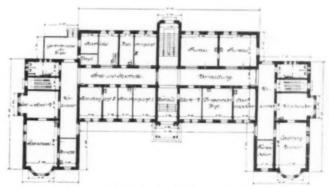


Fig. 18. Administration building-Floor plan

but by high-pressure steam from the central plant.

A feature of the steam heating is the radiators, which are placed in the window niches and arranged with hinges, so that they can be swung out to permit of their cleaning and of the cleaning of the walls (Fig. 20).

In only one building—in the central bath house—furnace heating has been provided for those rooms in which there is much watery vapor generated by the application of baths.

VENTILATION SYSTEM.

The requirements of the building program were as follows: a change of air once an hour in the

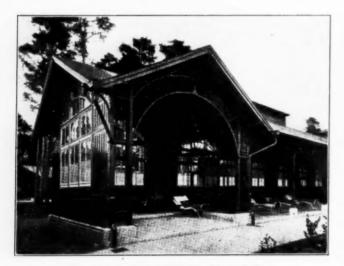


Fig. 19. An open-air pavilion-General view.

rooms for nurses and physicians; a change of air one and one-half times an hour in the corridors and staircases; a change of air twice an hour in the rooms of patients, day rooms, dining halls, wash rooms, reading rooms, examination rooms, and rooms for hydrotherapeutic treatment; a change of air three times an hour in the bath rooms, sculleries, pantries, and lavatories; a change of air five times an hour in the water-closet rooms.

In the pavilions for tuberculosis patients and in the central bath house the fresh air is tempered by steam, but the general hospitals have only a central ventilating system in the dining room, stairs, and bath rooms. All the other buildings have only local systems of ventilation.

In the central system of ventilation fresh air is drawn in through outside fresh-air turrets and is conducted through underground ducts to the buildings, where it is filtered, warmed, and moistened. The warming is performed by low-pressure heating stacks.

In the two pavilions for tuberculosis patients the fresh air is forced into the warm-air tubes by means of two ventilators operated electrically. In the rooms the fresh-air registers are located about 2.5 meters (about 8 feet) above the floor, and the registers are not less than 26×32 centimeters (10×13 inches).

Wherever the ventilation is a local one, fresh

air is admitted through openings located under the windows, and the fresh air is warmed by passing over the radiators standing in the window jambs. The foul air is removed by means of foul-air conduits carried above the roof. Both kinds of conduits are finished with glazed brick.

The rooms for patients and the bath rooms have two registers—one near the floor and the other near the ceiling; toilet rooms and rooms with slop sinks have only one register near the ceiling. All windows are provided with upper transoms. All toilet rooms, compartments for house maids' sinks, and compartments for the washing of linen are ventilated by drawing fresh air from the corridors, in which the fresh air is under slight excess of pressure from the electrically driven ventilators. The various foul-air flues are gathered together in the attics and carried to ventilating chimneys, in which a coil is located heated by high-pressure steam.

WATER SUPPLY.

No public supply to which the hospital could have been connected being available, it became necessary to provide an independent water supply plant. The sources of supply are wells of about 42 meters (138 feet) in depth. The water is of a medium degree of hardness, quite pure, and suitable for use in the boilers. It contains some iron, which is removed by special filters.



Fig. 20. A typical radiator—On hinges to permit cleaning of radiator and wall.

There are two deep wells, located about 70 meters (230 feet) from the boiler house, and the upper portion of each well is 2.5 meters (8 feet) in diameter and 19 meters (62 feet) in depth. From this depth downward a tube 30 centimeters (12 inches) in diameter is driven to the water-bearing stratum of sand. The well pumps are located at the bottom of these shafts and are operated by motors from the central station. The capacity of each pump is 10,000 gallons per hour. The

two pumps, when running twelve hours, are able to furnish about 250,000 gallons of water daily. Provision is made for about 150 gallons of water per capita per day. The water is pumped up to a wrought-iron elevated tank of 250 cubic meters (66,042 gallons) capacity.

One of the boiler chimneys passes through the center of the reservoir, which is built annular in plan, and in this way the freezing of the reservoir is prevented. The reservoir is built in two compartments, which communicate, but can be used separately or alternately. A mercury gauge placed in the engine room indicates the amount of water in the tank.

The filters for the removal of the iron in the water are of special construction, four in number, each of a capacity of 30 cubic meters (7,925 gallons) per hour. They contain wood shavings impregnated with dioxide of tin. A falling main, 25 centimeters (8 inches) in diameter, leads the water from the elevated tank to the network of distributing mains of the buildings.

The supply of warm water is, for some unaccountable reason, arranged differently in divisions A and B. While in division A a central hot-water plant had been arranged, the buildings of division B have each a separate hot-water boiler. Return circulation lines are provided in all cases. The diameters of the hot-water supply mains are 15 centimeters (6 inches). Expansion joints in the lines of hot water supply are provided at distances of every 15 meters (50 feet).

All pipes supplying hot water to the fixtures are of copper. All plumbing work is very substantially constructed and arranged strictly in an open manner. All faucets and valves are made of white metal. The slop sinks and closets are of earthenware and the bath tubs are of nickel-plated steel.

SEWERAGE.

The buildings are provided with two sets of pipes—one for the removal of storm water from roofs, paved areas, and walks, and the other for the sewage from the fixtures in the buildings. All lateral sewers join a main sewer, which is a 35-centimeter (14-inch) pipe sewer, about 2 kilometers (6,562 feet) long, carrying the sewage by gravity to an irrigation field. The irrigation field is about 5 hektar (12.35 acres) in size and located on a gentle slope. The purified sewage finds its way into a small brook.

REFRIGERATING PLANT.

The boiler house contains a compression refrigerating machine in which sulphuric acid is used, and has a capacity of 43 zentner (2.2 tons) of ice per day.

ELECTRIC LIGHT AND POWER PLANT.

This plant comprises two dynamos, one reserve dynamo, and one accumulator battery. Each of the dynamos has a capacity of 85 kilowatts with 160 R. P. M. The engines running the dynamos are of 100-horse power and can be increased to 150. The exhaust steam from the engines is used to warm the water in the central hot-water plant.

The lighting plant comprises 2,600 incandescent lamps of 16-candle power, 146 lamps of 25-candle power, 50 arc lamps, 8 motors for ventilation, and 64 plugs or connections for therapeutic uses.

CONSTRUCTION OF FLOORS AND FINISH OF WALLS.

The selection of a suitable floor for hospitals and sanatoriums is one of the most difficult problems, which has so far not been solved quite satisfactorily. Requirements of a perfect floor are a smooth surface, tight joints, strength, durability, imperviousness to moisture, nonconduction of heat, good appearance, and reasonableness of cost. Usually the floors in hospitals are made of terrazzo, unglazed tiles, linoleum, or parquet laid with asphalt joints.

In the hospital described terrazzo has not been used at all, and linoleum only for the covering of the stairs. Tiled floors have been used abundantly, and parquet floors have been used in bed rooms, day rooms, and dining rooms. The corners between walls and floors are rounded. All the corridors, bath rooms, pantries, and toilet rooms are covered with hexagonal tiles.

The walls in sculleries, kitchens, and bath rooms, where there is much steam vapor, are finished entirely with glazed or enameled brick, which is also used for the arched ceilings. Panels of glass are used in the wash rooms, bath rooms, pantries, sculleries, and operating rooms.

Censorship to an Extreme.

An article in the current number of the English Review severely criticises the prudery of the British Museum in refusing to issue books on sex subjects. Such books are practically buried, as they are not listed either in the author or subject index, and no information is given as to how they can be obtained. They recently refused to accept and catalogue Havelock Ellis' Psychology of Sex. Physicians and serious students of all kinds are thus deprived of valuable literature which no other library is in a position to furnish in such abundance or so promptly.

In the death of Dr. Edward Charles Spitzka, in New York City on January 14, the profession loses a noted neurologist, anatomist, and alienist. He has long been an acknowledged authority in mental diseases. Dr. Spitzka was one of the scientists selected to witness the first execution by electricity in New York state, and was a witness at the trial of Guiteau, the assassin of President Garfield. He gave as his opinion that Guiteau was insane.

ORGANIZATION OF THE NURSING DEPARTMENT OF JOHNS HOPKINS HOSPITAL.

Method and System Are of Paramount Importance, But All Hinges on Attention to Details—Quality of Work of Greater Moment Than Quantity.

BY MISS E. M. LAWLER, R. N.,

SUPERINTENDENT OF NURSES AND PRINCIPAL OF THE TRAINING SCHOOL.

CINCE the establishment of the training school of for nurses in connection with the Johns Hopkins Hospital, nearly twenty-five years ago, the policy of the school has remained the same, though necessarily many changes have taken place in the organization to adequately meet the demands of a growing hospital.

The staff now consists of superintendent of nurses and principal of the training school, 1; assistants, 8; head nurses, 36; student nurses, 154; post-graduates, 8; special students, 10; graduates on ward duty, 8; graduates on special duty (average), 48. Of the assistants, three are in charge of departments—the psychiatric clinic, children's clinic, and nurses' home. Four are in the office of the superintendent of nurses, and one is in charge of the nursing during the night. Those in charge of departments have had experience in the office as well as special preparation elsewhere, to fit them for their larger responsibilities.

In both the psychiatric and children's clinics there is an assistant in addition to the head nurses, and they with their assistant carry on all the teaching work in connection with their partic-

ular departments.

In the nurses' home the assistant in charge is a real "house mother." She is responsible for the home care of the pupils, and makes rounds with the physician on his daily visit at 9 a.m. She issues all instructions regarding the making and the repairing of the nurses' uniforms. She engages her own servants, is responsible for the housekeeping, the planning of the menu, and the ordering, preparation, and serving of the food. She has as her assistants a graduate dietitian and a senior student.

The first or senior assistant is kept well in touch with the general work of the office. She is responsible for the records pertaining to the special nurses. She engages the orderlies, assigns their work, and has the general oversight of it, and has also the general supervision of the pavilion for private patients, with particular reference to the work of the maids and orderlies.

To the second assistant is assigned the duties of instructor. She is responsible for the teaching of senior and intermediate students, with the exception of those subjects taken up by special instructors, as psychiatry, pediatrics, massage, etc. She manages the monthly schedules of classes and lectures for the school, and has assigned to her a certain number of wards for general supervision, where she may carry on her teaching.

The third assistant has the teaching of the junior class and of the practical nursing, and follows up the work of her pupils in certain definite wards.

The fourth assistant has the teaching of the preparatory students and is in charge of the surgical supply room. Here is kept the stock from which she distributes weekly, on requisition, instruments, gauze, rubber gloves, etc. Practically all the dressings used in the entire hospital are prepared here under her supervision, and given out to the different departments on a daily order.

Each of these assistants has definite hours on duty, and some one of them is required to make the evening rounds of the hospital, and at 9 p. m. give the night superintendent, who comes on duty at that time, a report of the condition of the different wards. By this arrangement there is no time when head nurses, with difficulties to solve, cannot in a few minutes refer the matter to someone competent to handle it.

The night superintendent is in charge of the hospital from 9 p. m. to 7 a. m., and is off duty one night a month. She receives a full report of the condition of the hospital when she comes on duty, and in turn reports to the superintendent of nurses when she goes off duty at 7 a.m. She is responsible for the nursing care of the patients during the night, and has the supervision of all nurses and orderlies, with the exception of the two special departments, psychiatry and pediatrics, which are in charge of graduate nurses.

The head nurses are in charge of the wards, operating rooms, out-patient department, etc., and they are given complete charge of their departments—that is, they see that the patients receive the proper attention, that the work of the orderlies and maids goes on as it should, and that the ward is properly taken care of. They make out the requisitions for all supplies, such as food,

¹This is the fourth of the series of papers on Methods of Administration in Johns Hopkins Hospital. Next month, "The Housekeeping Department," by Miss Crawford, Matron.

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Time on duty	D H	D B	D	H	D W	D	M	D	N	D H	D	H	D	H	D N	D N	D N	Gen Gyn.									
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Fig. 1. Johns Hopkins Hospital-Nursing department record system. Front side of card. Size of card, 912x812 inches.

surgical dressings, household supplies, etc., and see that these are carefully handled, and have ample opportunity to give bedside instruction to the student nurses. These requisitions are submitted to the superintendent of nurses, and by her to the superintendent of the hospital. The head nurses report the condition of their departments twice a day—in the morning to the superintendent of nurses when she makes the rounds, and again when evening rounds are made.

The school now numbers 154 pupils. Of these 41 are senior students, 49 are members of the intermediate class, and 64 are junior students, 39 of these last being still in the preparatory class, and therefore not on duty in the hospital wards.

The nurses are so assigned to the different departments that each head nurse will have on her staff seniors, intermediates, and juniors, which simplifies the arrangement of the nurses' hours, and allows the students to attend classes and lectures without interfering with the work connected with the patients. Changes in the staff are made with as much regularity as possible, so that the head nurse may be able to plan the work in advance. For example, in the maternity ward, operating rooms, and special departments one nurse is changed each Monday morning.

The pupil spends her three years in the school as follows:

Preparatory course 6	months
Care of children 4	months
Medical nursing 4	months
Surgical nursing 4	months
Gynecological 4	months
Private wards 4	months
Operating rooms	months
Out-patient department 1	month
Maternity ward 2	months
Phipps psychiatric clinic	months
Vacation 2	months
36	months

Students are admitted during the spring and autumn, which means that the lectures and classes for the preparatory students are given twice during the year. These students are on duty six hours daily, in surgical supply room, diet school, pharmacy, or assisting at clinics, but are in the hospital wards only when under the guidance of an instructor until toward the completion of the preparatory course. They then are placed on duty in the wards on the regular eighthour schedule for about two weeks, when the final test of their fitness to remain is made.

With the other classes, instruction in the class room is carried on from October to May, the mini-

Subject	Lecturer	Instructor	1		JUNIOR					RMEDL					SENIOR		
Subject	Lecturer	Instructor	No. Lectures	No, Classes	Date Exam.	Exam. Result	Class Work	No. Lectures	No. Classes	Date Exam.	Exam. Result	Clase Work	No. Lectures	No. Classes	Date Ecom.	Result	Was
Meteria Med.																	
Hygiene Bact. Path.																	
Internal Medicine																	
Infectious Diseases																	
Constitut. Diseases																	
Surgery																	
Gynecal.																	
Urinayais																	
Massage																	
Orthopedics																	
Obstatrics New Born																	
Children																	
Psychiatry																-	
Eye, Ear, Nose, Throat																	
Eye, Ear,																	

Fig. 2. Johns Hopkins Hospital-Nursing department record system. Reverse side of card. Size of card, 91/2x81/2 inches.

mum number of lectures and classes per week for each class being three. These are, with very few exceptions, held during the day, and are given almost entirely by paid instructors.

The day nurses have for years been on the eight-hour and the preparatory students on a six-hour schedule, with a half day on Sunday and on all public holidays. One hour is always allowed for meals. The night duty, of which each student has during her training between four and six months, is ten hours, or from 9 p. m. to 7 a. m.

The head nurse must so arrange the hours of her nurses that the ward is taken care of from 7 a. m. to 9 p. m. by the day staff, each nurse being on duty eight hours. The following may give some idea of how it is done:

Senior		 	 	.on	duty	7	to	9	and	1	to	7		
Interme	ediate	 	 	.on	duty	7	to	1	and	7	to	9		
Interme	ediate	 	 	.on	duty	7	to	1	and	5	to	7		
Junior		 	 	.on	duty	7	to	11	and	3	to	7		
Junior		 	 	.on	duty	7	to	12	and	1	to	4		
Junior		 	 	.on	duty	7	to	12	and	4	to	6 and	7 to	8

The head nurse is on duty from nine to ten hours per day, as she can arrange her work, and is off one afternoon during the week and half of Sunday. The day nurses assemble for prayers in the nurses' home at 6:50 a.m. At this time the announcements are made concerning the change of nurses from one department to another. They then go directly to their respective wards, where they report for duty, taking their places according to their seniority in the office of the head nurse, to hear the night nurse present her report and to receive their working orders for the day. At this time they are required to read all orders left during the night and all special charts.

The night nurses assemble in the nurses' home at 9 p. m. and report for duty to the night super-intendent. They then go to their respective wards and take over the work from the nurse on duty at that time.

In addition to the pupil nurses, we have eight post-graduate students on duty in the children's department and the psychiatric clinic. These students receive definite training and instruction in each of these departments, the lectures and classes being given by paid instructors, and a certificate is granted after satisfactory completion of the course.

We have also affiliations with two hospitals in the city, one sending its students for four months'

practical training and for almost all their lecture work, and the other sending its students for ten weeks' work in obstetrics; and finally we have three special students who are receiving from one year's to eighteen months' training, to allow them to qualify for state registration.

As it was impossible for the school to grow rapidly enough to provide nurses to equip the two new departments added to the hospital, it has been necessary to add to our staff a certain number of graduate nurses. We have at present eight on duty, and these come under the same regulations regarding hours as the pupil nurses.

The records of all students who are or who have been connected with the school are to be found in the office of the superintendent of nurses. The card index system is used, and the names are indexed under the headings, "pupils of the school," "post-graduate students," and "special students." Under the first will be found the complete record of any pupil who has been connected with the school, even if she has been only a pupil in the preparatory class for a few weeks. Under the second will be found the papers of the post-graduate students, which include their application papers, letters of recommendation, record of their service, and results of written examinations and practical work. Under the third will be found the information concerning the affiliated students. Only a brief statement regarding their work is filed, as a report is sent at the completion of their time with us to the schools of which they are members. Though the majority of training schools today employ much the same method of recording the work of each student, yet it might be interesting to present ours in detail.

When the application for admission is received, the papers—including personal letter, clergyman's letter, and doctor's certificate-are attached to a card on which is copied a brief summary of the information contained in all of these; also a statement as to whether the applicant is to be admitted or rejected, and, if the former, of which class she is to be a member. When the pupil enters on her probation she is entered in a day book, and each change from one department to another is recorded in this book on the date that it takes place. A record is also kept, which is made up monthly, showing how many days have been spent in each department up to that date. These records are continued throughout the three years.

Detailed reports concerning the work of each student are recorded monthly by the instructor or head nurse under whose supervision she has been. These reports are filed with the student's

papers. At the end of the probation period and of each school year a summary of these reportsa statement as to time spent in the different departments or wards, and a record of class work, number of classes and lectures attended, standing in classes and examinations, and by whom instruction is given-is recorded on a card which is placed in the folder with the application papers. Should a student leave the school, her record is made up to date, and a statement added giving full information as to cause of withdrawal. Her record is completed by adding a note stating in which department she was most proficient or wherein she had failed. By reviewing these records it is possible to assist the student in making her decision for future work, whether institutional, teaching, or private duty, and it is a ready reference for any inquiry which should be made concerning her efficiency.

It has been difficult to adequately describe the organization of this training school in a brief paper owing to the fact that simple statements are made without describing the detail, and, to get a clear idea of any system, the detail is tremendously important, as it is mainly on this that the efficiency of a system of organization depends.

WORKSHOPS FOR TUBERCULOSIS HOSPITALS.

New York Passes Model Law Under Which Communities May Provide Work for Patients.

Dr. Hermann M. Biggs, general medical officer of the city of New York, is responsible for the recent passage of a bill in the New York Legislature to favor the establishment of industrial colonies in connection with the tuberculosis sanatoriums of the state. This bill is such a model of conciseness that it may serve other states and municipalities as an example for similar action:

WORKSHOPS IN CONNECTION WITH TUBERCULOSIS HOSPI-TALS-Any municipal corporation maintaining a hospital or a sanatorium for the treatment of tuberculosis may establish and maintain workshops in connection therewith for the production of articles of supplies required by such hospital or sanatorium, or by any other institution or de-partment of such municiplity. Except in a supervisory capacity, no person shall be employed in such workshop or workshops unless he is or shall have been a patient suffering from tuberculosis in such hospital or sana-torium. The appropriate municipal authorities may appropriate or provide funds for the establishment and maintenance of the said workshops in the same manner as for the establishment and maintenance of such hospitals Notwithstanding the provisions of or sanatoriums. prison law in relation to the sale of articles manufactured in the state prisons, the products of such workshops may be used in such hospital or sanatoriums, or by any other institution or department of such municipality. workshops shall be under the direction and control of the hospital or sanatorium to which they may be attached.

This act shall take effect immediately.

The Louisville (Ky.) Post believes faith in a hospital to be dependent on the character of the men conducting it, being an observation in connection with the new \$1,-000,000 buildings of the new Louisville City Hospital. The hospital must, according to that paper, create public faith by dissemination of the right kind of literature to inform the public of its work and needs.

THE MUNICIPAL CITY HOSPITAL AT LOUISVILLE, KY.

A Partial Description of This Newly Erected Institution—The Constructive and Service Features Shown by Experience to Meet Modern Necessities Have Been Incorporated.

BY J. W. FOWLER, A. M., M. D., PH. D., SUPERINTENDENT.

THE world bows in admiration to the genius of the hospital architects of Europe who have wrought such wonderful structures for housing and caring for the sick and wounded. The western hemisphere salutes the constructive originality of the hospital experts of America, and sings a pean to the brilliant galaxy of hospital superintendents and architects who have contributed to mankind the most perfect temples of the healing art, and added many enduring blessings to the glories of the hospital world.

ing a ground space of about five acres, designed by D. X. Murphy & Bro., of Louisville. All but the isolation ward, power house, and employees' home are three-storied buildings, with high basements. A wide corridor extending the full length of the group of buildings, running east and west, connects the wards and the nurses' home on the south, and the power house, psychopathic, hydrotherapeutic, service, and clinical wards on the north. The main axis of the large wards is north and south.



Fig. 1. Louisville City Hospital-Five of the eleven buildings.

It is said that all we say, or think, or write is imperishable. If this is true, I would write a grateful tribute to the hospital sages of our own country, tendering to each of them a bouquet of flowers that would be as fadeless as the immortelles that grow high on the tropic mountain side.

Here in the sunny southland, at the Falls of the Ohio, "we sing ourselves," and our song is attuned to our new modern City Hospital, of a composite pattern, made up of all that is best from the old and new world, and fresh from the constructive brains of the most noted hospital experts of the South.

GENERAL DESCRIPTION.

The hospital consists of a group of eleven buildings, situated in the heart of the city and occupy-

It may be a matter of interest to state that one of the architectural difficulties to overcome south of Mason and Dixon's line is a racial one, making it necessary to duplicate the wards, dining rooms, etc., in order to separate the colored from the white patients.

ADMINISTRATION BUILDING.

The administration building is approached by a flight of white stone steps to a commodious terrace, which leads to a magnificent lobby, on the right side of which are situated the main office, with marble counters, and the superintendent's office. At the left of the lobby is the physicians' meeting room, with lockers and toilet rooms. The administration building connects with the main corridor through a link, in which are the

elevators and stairs. The elevators are cut off by fireproof partitions, and are lighted through wire glass in metal frames. The stairs are protected by a fire-wall throughout the building that makes them perfect fire escapes and also makes of each floor a separate unit, preventing the transmission of noises and cross infections. The stairs are built monolithic, of reinforced concrete, faced with terrazzo, rendering them aseptic and easily cleaned.

In the second floor of the building are the superintendent's apartments. The living rooms of the interns are located on the third floor, where they have a reading room, a lounging room, and the conveniences of shower baths, bath rooms, and toilets.

On the roof of the building is a semi-inclosed

and all of them have northern light. Modern practice condemns the large operating amphitheater, and therefore it was omitted. Skeleton iron stands, accommodating a limited number of students, are used for clinics. There is a large work room, with connecting toilet rooms for nurses, and a large room for surgeons with individual lockers and toilets. There is also a laboratory, where immediate tests may be made.

WARD BUILDINGS.

There are four ward buildings, two on either side of the administration. Each building contains three wards, making twelve in all. A ward consists of a "head house," the ward itself, and a solarium. There are 24 beds to each ward, each bed having 1,170 cubic feet of space. There is a window extending to the ceiling between each

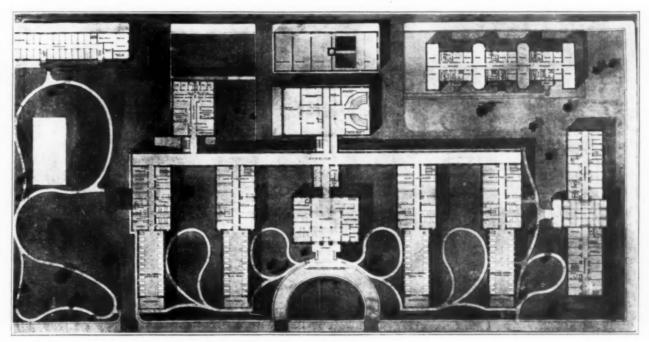


Fig. 2. Louisville City Hospital-Plan of the group.

roof garden for children. It is roofed over, and the sides and ends are inclosed in glass casements, which may be thrown open or closed.

SERVICE BUILDING.

To the north of the main corridor, opposite the administration building, is the service building. In the basement are the kitchen, bakery, receiving rooms for groceries, meats, milk, etc., cold storage rooms, and dining rooms for help. On the first floor are the dining rooms for the superintendent, interns, and nurses. The serving pantry connects with the kitchen below by an electric dumb waiter. In this building is an amphitheater, with four hundred seats, for clinical lectures. On the second floor is the medical library. The third floor is devoted to the operating rooms and their accessories. There are five operating rooms,

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pair of beds, with vertical sliding sash and a hopper transom, hinged at bottom to open inwardly, with slide to direct the current of air into the ward along the ceiling so as to prevent drafts. The transoms have operators, so they may be easily opened and closed. In transoms over the door between ward and corridor is a clock, and also the signal lamps for nurses and interns, which are visible from ward and corridor. On the east side of the corridor of the "head house" are two rooms, with capacity of 3 beds each, to be used as isolation rooms. Next is the serving pantry, connected by electric dumb waiters with basement. The food is brought from general kitchen on large heated trucks, and sent by way of dumb waiter to the serving pantries, where it is kept hot and distributed to the patients. Next

is the dining room for such patients as are able to leave their beds. Adjoining is the laboratory where ward interns make examinations. On the west side of the corridor, next to ward, is the nurses' duty room, containing sterilizers, cleaning sinks, closets for bed pans, a warming oven for towels, clothing, and blankets, and an incinerator for ward garbage. The room has a window looking into the ward, so that the nurse at all times has supervision of the ward. Next come water closets for patients, and bath rooms, with both shower and tub, so placed that the nurse may get all around the patient. Next is a linen room, and adjoining is a clothing room for patients, with lockers. Next is the apparatus room, where all

cal, eye, and ear cases. Next is a well-arranged pharmacy.

RECEIVING DEPARTMENT.

The receiving department has two receiving rooms, where the ambulance delivers patients under cover, one room for white and the other for colored patients. Opening off each entrance room is a small ward, with bath and clean-up room, where patients may be placed temporarily at night.

In the basement of Ward No. 2 are the house-keeper's office, toilet and locker rooms for men and women of both colors, a carpenter's shop, etc. In the basement of Ward No. 3 are the general store rooms.

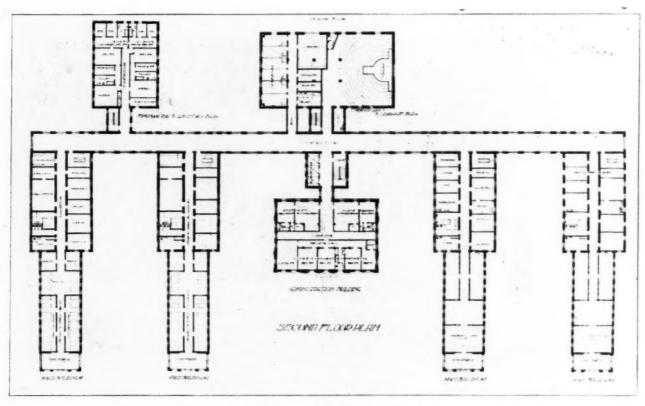


Fig. 3. Louisville City Hospital-Typical floor plan.

movable apparatus for use in wards is kept. In this room is a chute for soiled linen to be dropped in basement. The foregoing describes a typical ward.

MATERNITY WARDS.

The maternity wards are subdivided—a large room for waiting women, two small rooms for babies, room for post-delivery cases, and a room for convalescents.

OUT-PATIENT DEPARTMENT.

The out-patient department consists of a large waiting room, with separate apartments for white and colored patients. There are seven rooms for individual examinations and treatment. These rooms have special equipment for medical, surgi-

In Ward No. 4 are the pathological department, morgue, autopsy rooms, chapel, coroner's room, waiting room for witnesses, and pathological laboratory.

PSYCHOPATHIC BUILDING.

This building is to the north of the main corridor, and is thoroughly equipped for the examination and treatment of all suspected cases of mental diseases and insanity. The x-ray, photographic, hydrotherapeutic, and electric treatment rooms are on the third floor of the building.

ISOLATION BUILDING.

This building, which stands by itself, is designed to care for the contagious diseases. Here different contagious diseases may be treated with-

out danger of cross infection, there being no inside communication between different sections.

PATHOLOGICAL DEPARTMENT.

The morgue is equipped with a refrigerator containing different drawers, and the autopsy room has a modern ventilated operating table. The pathological laboratory is provided with lighted tables for eighteen students. There are also refrigerators, centrifuge separators, sterilizers, incubators, and numerous other fixtures for teaching and experimental work.

There is so much connected with our big gen-

eral hospital that for lack of space I will hold some of the features in reserve for another article, in which I will attempt to describe the nurses' home, employees' home, the lighting, plumbing, heating, sterilizing, and signal system, and the laundry, incinerators, elevators, and power plant.

A TESTIMONIAL.

A beautiful bronze tablet adorns the wall of the lobby of the hospital, upon which are inscribed the names of the commissioners who gave so much time and thought to its building. They have the gratitude of the entire community.

ADVANTAGES AND DISADVANTAGES OF A SMALL HOME HOSPITAL.

Balance Seems to Favor the Hospital Near the Patient's Home—Greater Individualism Permitted—Better Air, Greater Quiet, Purer and Fresher Food—Home Hospital Develops Better Medical Men.

BY JAMES FREDERIC CLARKE, M. D., FAIRFIELD, IOWA, STAFF OF JEFFERSON COUNTY HOSPITAL.

A LL hospitals are so useful and beneficent, that a discussion of the comparative advantages of large and small institutions may seem unprofitable. However, the new "Iowa idea," by which the people of rural communities are building hospitals for themselves, is spreading so rapidly over the United States that it is arousing much comment and attention. Physicians in the country are asking for these small rural hospitals. Many members of the medical profession in the cities are frowning on the building of such institutions. The writer believes that their universal establishment is coming, and, if this belief is justified, it may be well to consider the changes this will entail in medical practice.

The reason for the existence of any hospital is its ability to help the patient. Incidentally it lessens the physician's labor and makes positions or a school for nurses, but these are comparatively unimportant considerations. Doctors and nurses are merely part of a hospital's equipment-of a quality good or bad, as the case may be. The one pertinent question to ask should be, Is it better for Farmer A, when ill, to be cared for in a small rural hospital near home, or in a large city hospital? Where will the ill or injured man, woman or child be insured the speediest and most perfect recovery with the least exhaustion or anxiety of relatives and friends? Because of the universal sympathy and kindheartedness of the rural people in America, the continued illness of a member of one family has, in the past, meant the exhaus-

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tion of the other members of the family and many neighbors by night and day nursing and anxiety. Many times these untrained nurses have acquired typhoid or other infections, and added yet more to the burden of the community.

The writer, reared in a doctor's family in the country, for a time intern in a large hospital, twice a surgical patient in large city hospitals, and now for a year and a half in close touch with a small rural hospital, has observed all ways of caring for the sick. In all the various hospitals he has had such pleasant experiences that the shortcomings of any one seem rather insignificant as compared with its excellences. There are, however, differences between the large city and the small rural hospital, with, it seems, a marked advantage in favor of the latter.

The ideal conditions for the care of the sick would be an addition to the home, equipped with every hospital appliance, two or three trained nurses, and the most skilled medical attendants. Any hospital is an attempt to supply for all the people these impossible and expensive conditions.

For obstetrics the small home hospital must of necessity serve its rural community. Women of the country cannot, without prohibitive expense and inconvenience, go to the large hospital for confinement. On the other hand, it has been found entirely practicable, in Iowa, to take the country women within a radius of twelve miles to the county hospital at the time of labor. In a few years the average distance between Iowa rural hospitals will not be greater than twice twelve miles. In these hospitals the best service is now given the mother and child at just one-half the

¹Dr. Clarke was asked to write on this subject because the initial success of Iowa's first county hospital was due in large measure to his excellent judgment and wise guidance. The illustrations are those of the hospital that Dr. Clarke has in mind.—Editor.

cost of a trained nurse at home. The advantages of a well-equipped hospital maternity ward over the best country home are inestimable. These advantages, leading to the greater safety of both mother and child, are so rapidly becoming known that before many years the custom of hospital confinement must become quite universal in rural communities. How this will lessen the pangs of



Fig. 1. Jefferson County Hospital-Front view.

the doctor's conscience, who, after his best efforts to repair a torn perineum in a low country bed, knows that his work is not well done!

For a considerable proportion of medical patients and emergency surgical affections only the nearby rural hospital or the home can be considered. Patients with typhoid fever, pneumonia, rheumatism, and like conditions can, with a good ambulance, be placed in a home hospital when transportation to a distant city could not be considered. The treatment in the hospital halves the expense and relieves the family of exhaustion and danger of infection. Aside from the question of transportation, the advantages of the home hospital are the nearness to friends and acquaintances, the presence of his own physician, and a good nurse, and the other factors to be considered later in detail. Every country home and every rural hospital room has a telephone. The home hospital thus becomes but a detached part of the man's own house. To have a very ill relative a long distance from home is a cause of great anxiety to a whole family. The journey of relatives back and forth is at a large expense and loss of time.

There remains to be considered the chronic internal affections and the nonemergency surgical patients who need hospital care. The problem presented daily to the rural family is, Shall these sufferers be taken to the home hospital or to the large city hospital?

The small hospital has usually the advantage of location and environment. In the country land is comparatively inexpensive, and the hospital grounds are in consequence ample. Sunlight, pure air, and a cheerful view of fields and woods,

a freedom from noise and smoke and other extraneous annoyances of a closely built city—these all appertain to the rural hospital. These all are aids in restoring the health.

The kitchen supplies of a rural hospital should be superior to those obtained in cities. In the country, where milk, eggs, vegetables, and fruits abound, it must be easier to supply the few patients with an attractive dietary than it is to prepare the many food trays of a large city institution. Of all the memories in the average hospital patient's mind, the diet lingers longest. The food furnished is usually the criterion by which the hospital is judged. Necessarily the three meals are the chief events of long, monotonous days.

A cured tubercular friend assures the writer that his taste can easily detect an egg that is more than twenty-four hours old. He firmly believes from personal experience that the chicken farm must be near the hospital to make a raw egg diet tolerable. The rural hospital has the supply farm at its door.

Chief among the advantages of the small home hospital is the fact that each patient is an individual human being—not number 500, but number 1; each is an acquaintance of his doctor and his nurse; each, in the new "Iowa idea," is a proprietor of the institution. Each patient is watched (as is his doctor and nurse) by the whole com-

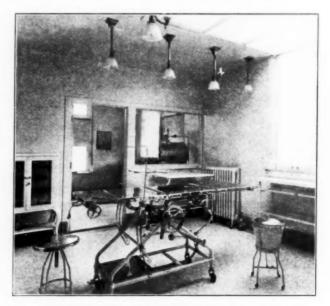


Fig. 2. Jefferson County Hospital-Operating room.

munity. This compels an individualized and humanized service not possible in large institutions. With failing health, egotism usually becomes more pronounced. A sick man's horizon is narrowed and he becomes self-centered. To an unreasonable degree he demands personal consideration. In the small hospital each patient is more apt to feel that his welfare is of first im-

portance, and he is for that reason better satisfied, as are his relatives. In the home, with family nursing, the personal sympathy and indulgence is overdone and often delays recovery, but there is no doubt that, with the best intentions, nurses and doctors in a large hospital, becoming habituated to routine, know patients by number, and

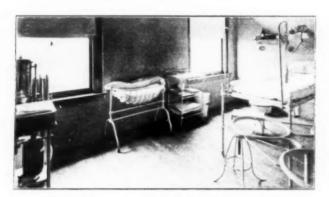


Fig. 3. Jefferson County Hospital-Maternity operating room

are much interested only in rare pathological conditions.

Not long ago a country doctor took a patient to a large city hospital, where one of the most distinguished American surgeons did three abdominal operations with one anesthesia. The patient was anesthetized by an intern. The anesthetic was prolonged before the operation was begun because preceding work was unexpectedly extended. After the closure of the wound the much shocked patient was put to bed in a room five stories below and quite distant from the operating amphitheater. An hour later he was there seen, blue, almost pulseless, and without a nurse or attendant in sight. On an appeal to the superintendent a nurse was finally found, but she exhibited no anxiety and assured the caller that all would be well. The patient was number 500 in a busy hospital which has a deservedly excellent reputation. A few days later the patient died. He had the best possible care under the crowded conditions. However, the thought cannot be dismissed that with a shorter anesthesia and more rigid personal care the balance might have been turned toward life.

Possibly it had been better to mention, before the food supply of a hospital, the essential equipment—a nursing and medical staff. Either at home or in the large or small hospital, nurses of equal ability can be obtained. To employ a good nurse in the home and board both her and the patient is a considerable expense. In a large proportion of cases hospital nursing is equally, or even more, efficient because the nurse has more equipment with which to work and several nurses relieve each other. Nursing is more satisfactory

in the small than in the large hospital because there are fewer patients per nurse, and in the small institution the nurse knows the patients and their families, and is under the direct observation of and, in a sense, in contact with relatives and friends.

The question of the efficiency of the medical staff is of first importance in selecting a hospital. Where is Farmer A, with failing strength and repeated attacks of epigastric pain, to receive the best diagnosis and medical or surgical treatment? the best chance of a perfect recovery? In the large city hospital he will have a famous skilled surgeon for his operation, with interns of one or two years' experience for attendants. In the small home hospital he will have a general practitioner for both operator and attendant. The writer knows of no adequate available data by which comparative end results under these varied conditions can be determined, and without such data a personal opinion is of little value.

The specialist who looks continuously through one kind of a speculum has usually a circumscribed view. The general practitioner in the more remote community, familiar with his patient's life and inheritance, has a broader basis for his opinion. All the advantage is with neither.

The chief, perhaps the only serious, argument advanced against the building of rural hospitals is the fear that local physicians will in them attempt surgery beyond their ability. There is no



Fig. 4. Jefferson County Hospital-X-ray room.

doubt that many rural practitioners do, with inadequate experience, attempt major surgical procedures. But is this less apt to be a practice in the rural hospitals than it now is in the patients' homes? The inspection and criticism of each doctor's work in the rural hospital by his colleagues compels extreme care and a perfected technic. The writer has known of a country doctor of small experience doing a gastrectomy in a home, with death soon following the operation. The surgical profession, the state, the trustees of hospitals, public sentiment, or some restraining body will possibly before long establish regulations that will make such things impossible. When the patient in hand has appendicitis, strangulated hernia, extrauterine pregnancy, depressed fracture of the skull, or some such grave condition, the general practitioner must be able to operate and at once, and must have a hospital near at hand. Many lives are saved in the country by the prompt action of moderately skilled surgeons in such emergencies.

Physicians of both large and small hospitals have ample tools with which to work. The small hospital, as well as the large, has its clinical laboratory and x-ray machine. In the small hospital now the doctor often makes his own clinical investigation, or it is made for him directly under his own eve. The bacillus found, the tube cast seen, the blood-cells counted are blended into the picture of the patient's whole life, and possibly the judgment formed is sounder, deeper, than it can be when a laboratory assistant sends to the surgeon a printed report of a stranger's condition. But even if this be true, its advantage must be surrendered, for the rural doctor is too busy for laboratory work. Before long the country physicians will unite in employing a clinical laboratory assistant to live in the hospital and do work for all. Even then, however, the doctor will look through the microscope and keep in close touch with the routine of this work.

One splendid work the rural hospitals are now doing is that all physicians seeing the laboratory work of a few are becoming educated to the necessity of blood counts and other clinical procedures. The hospitals are to increase the efficiency of the doctors in every rural community. The present haste, carelessness, and lack of thoroughness in study must give way to accurate scientific work.

It is altogether probable that the increasingly high standards of medical education, required hospital internship, and dispensary experience and final practice in more or less remote rural communities with all hospital facilities will develop general practitioners able to serve the people well. If the small hospital then maintains its advantages in other respects, it will undoubtedly surpass the home or the large institution as a place in which to care for the sick.

Another improvement in Philadelphia institutions will be the enlargement of the isolation ward at St. Joseph's Hospital.

EFFICIENCY IN AN ORIENTAL HOSPITAL.

Good Laboratory Work and Well-Arranged Clinics Are Features of Hospital in Famous Dalny.

Major P. M. Ashburn, United States Army, is on his way home from the Philippines by way of the Orient. He has written some of his impressions of various lands through which he is passing for the *Military Surgeon*, from which this brief account is taken:

"Of medical interest the principal feature in Dairen (the famous Dalny of Russo-Japan war fame) is the General Hospital. I visited this hospital alone, and, while most courteously received and shown over the entire institution, I had difficulty in learing all that I wished to know because of the language barrier. I spoke no Japanese and no German, while the Japanese doctors spoke very little English.

"The hospital, which is of Russian construction, is a poorly lighted and poorly ventilated building. Built as the South Manchuria Railway Hospital, it now plays the part of the City General Hospital. It has, I think, about 300 beds. Poorly arranged and poorly equipped, when viewed from an American standpoint, it likewise does not suit the Japanese, who have planned and begun the construction of a large and modern hospital which they expect to replace this one in 1915. Nevertheless, the present hospital is equipped with the necessities for good work, has an active staff of twenty medical officers, and, so far as I could judge, does excellent work in medicine, surgery, the various specialties, pathology, bacteriology, serology, etc. More careful work is done there than at any other place I have seen since leaving Manila. It is only just to some other institutions, though, to say that they have not the personnel sufficient to make thorough medical work a physical possibility. At Dairen the personnel is abundant as well as capable.

"Of infectious diseases, I learned that dysentery is common there, typhoid less so, typhus uncommon and relapsing fever rare and found only in the Chinese. nosis, treatment, and records all seem good. T gical side of the hospital would indicate by its general appearance and by its rather crude operating room equipment that surgical technic is less highly developed than the average American hospital. Well-equipped clinics for eye, ear, nose, and throat, gynecological, venereal, obstetrical, and general medical and surgical work indicated that each class of work was being looked after. A good and apparently much-used installation for electrophysico and hydrotherapeutics was rather a surprise in a place that seems so 'out of the way.' The bacteriologic, serologic, and pathologic laboratories were equipped and being used in a manner to indicate that the proportionate weight attched to the work of the laboratories is greater than in the average American hospital. A large and well-stocked animal house suggested that a good deal of research work is done at the hospital, the experimental animals noted being monkeys, rats, mice, chickens, pigeons, donkeys, sheep, dogs, cats, and rabbits.

"At Port Arthur there is nothing of present medical interest, but the medical officer of the army cannot fail to be impressed with the stupendous amount of work that is thrown on his department by such encounters as were those about Port Arthur, and he wonders how the work was accomplished; but wonders in vain—or at least I did—as my guide could not tell me. Being a Japanese and ordinarily human, he had no room in his thoughts for such inglorious details; and truly it is not remarkable that this is so, for the most casual observer cannot fail to see that the display of valor was truly glorious for both of the nations involved, and it deserves all the admiration and exaltation given it. The loss of life was terrific, and Japanese blood was spilled in a manner considered by many as reckless and wasteful; yet, if anything could compensate for wastefulness of that sort, it would probably be the pride of race and the patriotism called forth by the exhibition of bravery, enthusiasm, and scorn of death that made such waste possible."

Samuel Grabfelder, a Philadelphian and president of the National Jewish Hospital for Consumptives, Denver, Colo., has given \$500,000 to that institution.

PARTICIPANTS IN PLANS FOR THE HOSPITAL.

Architects Are Entitled to Advice of Competent Expert—Evaluation of Important Features Must Be Made—Trustees and Superintendent Not the Best Counsel.

BY T. J. VAN DER BENT, OF MCKIM, MEAD & WHITE, NEW YORK.

PAPER II.

OCCASIONAL visits to old institutions, which are in every respect behind the times in equipment and buildings, but which, nevertheless, have been able to retain their staff of employees for a great many years, will point out one of the most troublesome causes of dissatisfaction in newer and more up-to-date institutions.

IV

In these old buildings, if a remark is heard from any employee, it is one of praise for the institution, as a whole or in part. No complaints are made of poor equipment, of bad buildings, and the like. Everything is excellent, serviceable, does the work, or "will do." Each employee is proud of his institution and will not say a word against it. The result is that to the layman this antiquated institution retains a reputation for thoroughness, good management, and proper efficiency, quite often entirely undeserved. I have visited hospitals with good reputations, but which were poorly managed, and in some instances in absolutely filthy condition.

The fortunate condition of harmony and general satisfaction changes immediately on the appointment of a new employee, who has charge of a major or even a minor department. A new superintendent, a new pathologist, kitchen chef, laundry manager, or chief of nurses—each one will upset the peaceful equilibrium of former times, and with the first attack the reputation of years is lost.

This change of personnel is of as great importance to the new institutions as it is to old ones. Although before the arrival of a new kitchen chef the up-to-date equipped kitchen proved entirely satisfactory, the new chef may be one of those who will insist on a complete change. He will condemn everything existing, and does not rest until he has obtained his wishes. With a new manager of the laundry the experience will be the The laundry layout, the number and type of machines, the arrangement of floors-all will be criticised, condemned, and declared unworkable, although they may be the most perfect in the country. If the kitchen chef and laundryman had been employees during the building operations, and their advice had been asked, they would

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consider the kitchen their work and the laundry their idea, praise their respective departments to the sky, and rather work twice as hard as ever before in order to obtain good results than complain about the condition of their establishment.

With this consideration in view, each complaint about features of the hospital buildings and equipment should be carefully investigated. It will be found that much is condemned on account of lack of knowledge, unfamiliarity with the most modern and the best type of installations, and a complaint from certain employees about the layout and equipment of their department will, on a rigid investigation, condemn the complainant as unfit for his work. These unjust complaints undermine the reputation of the institution. Outsiders very quickly hear them, with consequent reflection on the efficiency of the buildings and the equipment. Those who make complaints for selfish purposes should be considered as criminals and be severely punished. They are false to their employer, and are working against their own interests as well as those of the institution. The feeling of loyalty and pride, the two essential requisites of any employee, are lacking in them.

In view of the fact, however, that many complaints are made which contain degrees of merit, those who are empowered to receive and adjust such complaints should see to it that all criticisms receive proper attention, are investigated, and acted on without delay.

It will thus be seen that every hospital should have a man with sufficient knowledge and experience and equitably judge all complaints of whatever nature, and he should also have the power to remedy any defects if they are found to exist. This man may be the superintendent, if he is not too busy with other work, or it may be a special adviser. Directors of the institution are apt to pay too much attention to complaints from all quarters. For instance, when the power plant, lighting plant, ventilating and heating equipment, or the elevators are not giving satisfaction, and are complained of by the engineer, the directors are not apt to consider the possibility that this particular engineer may be ignorant - lacks knowledge, practice, and experience. No, it is much easier to condemn the entire plant.

As another example, their institution may pos-

¹The first of these papers appeared in the February number.

sess a perfectly planned and equipped laboratory, but when the new pathologist finds it different than the one with which he was formerly familiar, and which was undoubtedly patterned after one which he had seen somewhere on his travels, this new laboratory is declared faulty, and must be changed to suit the whim or fancy of the new incumbent.

It is unnecessary to state that if the directors, after a rigid examination by a competent authority, found the complainant guilty of ignorance and subsequently discharged him, there would be a diminution in the number of complaints, and more general satisfaction.

A new superintendent of nurses, who has been accustomed to wood floors, will consider wood floors the best. On the other hand, one who has dealt only with tile floors will call only tile floors satisfactory, and so on with every department.

It is, of course, advisable, absolutely essential, and the only good policy in the planning of a new hospital, that advice and opinions be asked of all the heads of departments and of many of their assistants. The heads of departments like to have some say in the planning of the new institution, and, if not, will in most instances criticise or condemn everything that they find. Just how far the routine of an existing institution does influence the judgment of the employees is for the special adviser to know and to judge. If the architect has to rely on the judgment of employees who have seen many years of service and are accustomed to certain methods and certain equipment, he will obtain from them wrong ideas and be liable to place antiquated installations and features in the new hospital. Nor can the architect obtain the necessary information from the directors, from whom it cannot be required or expected that they have knowledge of these details. This would again prove the need of a special man to instruct the architect fully about such requirements.

V.

The various causes of failure and little satisfaction in hospital building, as mentioned in the beginning of this paper, are, to those who have scientifically struggled with the problem, so apparent that no further explanation is needed. The incomprehensible stubbornness in most organizations, however, in holding on to their own methods and their animosity to changes makes it necessary to explain in detail some of these causes.

After the lengthy explanation given above, it seems of little need to go into much explanation of the fifth cause mentioned, inasmuch as the first four, for the greater part, explain the fifth.

The wide difference between the requirements, the different locations and situations, the different climatic conditions, the difference in the communities themselves, and the daily life of these communities, hardly make it possible for two hospitals to be exactly the same.

Each hospital requires a careful study of the exact needs, a study of the financial condition and the possibility of maintenance based on the fixed requirements, and after this a decision of how much of the different requirements can be fulfilled in order to come within the amount available for construction. This necessitates a careful revision of the requirements if a shortage in funds is shown, and perhaps the elimination of some in order to begin the new hospital construction on a proper basis. A preliminary sketch plan must be made in order to obtain the estimates of cost. This plan cannot be made until a complete program of requirements has been decided on and issued to the architect. Without such a detailed program the omission of essential features in the estimates is the usual result.

For a complete understanding in estimating the cost, the architect must also have complete information as to all of the requirements of each department, and the necessary floor area which each department may be allowed. They must, further, be acquainted with the wishes of the directors, or governors, as to what policies they will follow in housing of the help; for instance, single or plural occupation of rooms in the dormitories; their opinions as to certain types of heating and ventilating systems, their preferences as to grades and qualities of building materials, as to the necessity for an electric light power plant, the extent of the out-patient department service, the ambulance service, the maximum number of general hospital patients, the same as to the private patients, the probable number of surgical operations per day, and numerous other items of general information.

In reaching their decisions as to several of these items, the advice of the architects and consulting engineers in the respective branches should be asked, and, if possible, followed. If all of this information is carefully studied, there is no possibility of a chaotic condition at the very beginning of the planning.

In case of limited funds, the directors receive with the first preliminary sketches all necessary information and are thus able to make reductions, making these reductions in the proper branches. No time is wasted in making complete plans and extensive studies based on wrong and incomplete information. No disappointment will occur in the nonfulfillment of too great expectations. The

final result will be a structure planned and designed as it should be through the cooperation of all of the factors necessary for the understanding of the wants, resources, and policies of the hospital.

VI.

For reasons given before, the only solution which will produce satisfactory results is the early appointment of a capable professional adviser, who will relieve the governors, directors, or trustees from the responsibility of deciding all questions outside of their department. Several years ago I would have strongly objected to complicating matters by obtaining advice from outsiders, but careful investigation has shown the absolute necessity of having one man-a capable, broad-minded man, with an extensive general knowledge of medical and surgical practice, as well as a thorough knowledge of details of administration—to give all important decisions pertaining to these portions of the hospital problem. Such a man is rarely to be found among the hospital staff, and, even if found, very seldom or never has enough free time to give sufficient attention to the new problem.

It should be borne in mind, however, that this adviser cannot, and should not, have the decision of any questions in connection with architecture or engineering, nor should he be required to make sketch plans. A preliminary sketch plan made by him leads to prejudice when he is judging any departure from his original ideas. If a competent architect receives complete information, he should always be able to find a solution where architecture and engineering go hand in hand with the best medical or administrative viewpoints. If it is wrong for an architect to consider the medical or administrative demands opposed to proper architectural solutions, it is equally wrong to consider architecture and engineering enemies of good hospital construction. Most architects, however, adhere to the first and most doctors to the second opinion. I cannot lay enough stress on the fact that it will handicap the architect if the adviser attempts to do part of the architect's work, inasmuch as it will lead to friction and misunderstanding, except in rare instances where the adviser is an extremely liberal and broad-minded man, and one who does not consider that his first thought of the plan is, per se, the only good solution. The present era requires a distinctly new profession-namely, that of general hospital adviser. A general hospital superintendent seldom can devote the time required for the demands of this position of adviser, and, moreover, is hardly ever sufficiently independent to strongly oppose matters proposed by his principals, the trustees or directors, which are not in strict accordance with his own conception. A man entirely free from such conflicting relations is to be preferred.

VII.

It will be evident that the previous chapters have, in part, given explanation of each other, and that the reasoning therein leads to the same conclusions, even though starting from different points. From what has been said before, little need be added as explanation of the last item mentioned—namely, that the judging of competitive plans cannot be done without proper data of comparison.

No plans can be judged fairly unless a very complete program of the requirements has been given to the architects. With hospitals, more than any other buildings, the best solution of the problem is the solution which has adhered strictly to the program, provided, of course, that this program has been made up by a competent authority, and carefully describes the wants, the general grouping, the allotment of space, and all such matters mentioned before as requisite instructions to the architect.

An incomplete program, or one written by a man incapable of the task, will result in doubt about requirements in the minds of different competing architects. Erroneously, importance will be given to unimportant matters. The principal questions will be ignored, or considered of small moment. The best architect may have considered the most vital matter as of small importance, and thus, through insufficient information, will present a plan which will be condemned by the judges, whereas, had this architect been properly informed through a complete and detailed program, probably his solution would have been the best of all. The program should state the grade of importance for each requirement, and not leave the judgment on medical or administrative points to the competing architects. For a good many reasons, not necessary to enumerate here, competitions cannot be recommended, and better satisfaction will be obtained if the architect is selected without competition, his selection to be made at the same time with the appointment of the medical adviser, and these two men should work together on the problem from the very beginning, as it is essential that their views should be considered in the selection of the hospital site. If a competition is held, however, it should be properly arranged and along definite lines.

I wish to add a few words in reference to the terms "hospital principles" and "sanitary construction." If we may assume that the capacity of hospitals in the United States is entirely inadequate, and that the cause of this condition is, in the main, lack of funds, it will be evident that one question stands out as of the greatest importance, and a decision will have to be made at the very beginning of new hospital planning—namely, "What must be considered of greater importance: strict economy in construction, or the conscientious carrying out in all hospital details the so-called sanitary and hygienic principles without regard to expense?"

If there is an unlimited amount of money available, the construction of an ideal hospital becomes a theoretical possibility. With a great amount of study, abandonment of nearly all existing structural details to which factories have adhered for many years, and the overthrow of conventional forms and shapes in construction and design, the possibility of achieving strict hygienic construction does, theoretically, exist. Anyone familiar with the difficulties of changing trade or factory shapes, of machinery made for many years to turn out regularly returning details, will know that an unlimited amount of money is reguired to have the manufacturers make these changes. In several instances the fight against this adhering to antiquated and unwarranted forms and shapes may be called hopeless. As an illustration, I may cite the campaign for the metric system in England and the United States. For nearly fifty years this fight against the most retarding influence in engineering practice has been in vain on account of the refusal of a few English manufacturers to change their dies and old-fashioned methods. To expect, therefore, that all manufacturers will change their business methods to such an extent as this hygienic construction would demand would be too optimistic. Not only would the manufacturer have to change his machinery and dies for new forms and details, but also keep his old machinery for the supply of ordinary, or nonhospital, or—permit me to call it —nonhygienic building trade. Under the head of hygienic building we may count all institutional structures, such as schools, hospitals, tenements, dormitories, and even factories. If we further consider that these so-called hygienic details require in most instances more expensive material and more expensive construction, it becomes quite apparent that there are some very important issues, namely:

1. What is more important—to construct a greater number of hospitals in an economical manner, or a lesser number on strict sanitary principles?

2. To what extreme may the architect go in

carrying out details of construction strictly on hygienic principles?

3. What is the actual definition of hygienic principles in hospital construction?

To illustrate the difficulties existing for the architect, let us consider one small structural detail only. Dust ledges are called unsanitary. Places where dust can lodge must be avoided. In this connection, must it be understood that no dust ledges will be tolerated, or does it mean that, as far as practicable and as far as finances allow, dust ledges must be avoided? My personal view has been that strict avoidance of dust pockets and dust ledges is only a theoretical, and not a practical, possibility. It is a very vague term, a very indefinite requirement, resulting in many flagrant violations, which violations have been carried through in many instances without opposition.

Considerable objection is raised to projecting bases or projecting band-courses, but one never hears objections to radiators, registers in walls, and seldom against window and door trims. Window sills and numerous details of ordinary windows, with very objectionable and uncleanable dust ledges, are allowed. All sorts of equipment is placed in rooms which is impossible to keep free from dust and impossible to clean. Realizing this, it has been my personal practice to construct the meaning of "avoid all dust ledges" as "eliminate wherever practicable and possible, and, where they cannot be avoided, make cleaning possible or less difficult." The sanitary base has made it simple and possible to clean floors. right angle between floor and wall makes perfect cleaning impossible. A flush door, without panels, has done away with numerous dust-catching moldings, etc. We proceed slowly, every day we make a step forward, eliminating all objectionable dust ledges and dust pockets. To insist, however, on complete elimination at once, and only in one direction-namely, in architectural features-is unreasonable. Practice and cost make it impossible. As yet the omission of door and window trims is very costly, but it is nevertheless possible. Some day we will be able to obtain a window without any dust ledges, and at a reasonable cost.

For a later paper I will leave two other important questions in reference to hospital construction, and to which no definite answer has as yet been given, namely:

- 1. The necessity of mechanical ventilation in hospitals, and the extent to which it should be used.
- 2. The efficiency or inefficiency of hospital help and its influence on the successful operation of mechanical devices.

ORGANIZATION AND ADMINISTRATION OF THE NURSING DEPARTMENT.1

Material for Nurses—Standards—Admission of Pupils—The Training and Discipline— Punishments—Honor Women—The Curriculum—Records— The Teaching Staff—The "Home."

> BY MISS ELIZABETH A. GREENER, SUPERINTENDENT OF HACKLEY HOSPITAL, MUSKEGON, MICHIGAN.

PAPER IV.

THE ambition of every good hospital, whether it be large or small, is to graduate high-class, efficiently trained nurses from its training school. Yet, many times, on no one point of vital interest and concern to the success of an institution is less judgment and discrimination shown than in the quality of material admitted to its school of training. Years of painstaking labor are frequently spent in the attempt to develop well-trained, intelligent nurses out of hopelessly impossible material; this, too, in face of the fact that, unlike most student bodies, the matter of admission is not practically compulsory, but is absolutely controlled by those in charge of this branch of the work.

The reasons for this condition, which seems to exist in so many schools, are self-evident. Either the standard of admission is too low, thus permitting the admission of undesirable candidates for training, or the number of desirable applicants too limited to permit of proper selection. Frequently this is the fault of the school itself, which cannot or does not give the proper equivalent in return to its nurses, and is thereby unable to attract a superior type of woman.

ADMISSION OF PROBATIONERS.

The standards of admission and requirements should be as high in the small first-class general hospital as in the large one. While the actual training will necessarily be somewhat different in character in these two institutions, each possesses valuable qualifications and should turn out equally efficient nurses. In the small school the personal equation and almost individual instruction and supervision which is possible to give, together with the greater responsibilities intrusted to the nurses in training, practically offsets the much greater experience afforded them by the large hospital.

In order to attain success in the nursing profession, a probationer requires not only the right kind of a preliminary education, covering at least two years of high-school work, but should also have the infinite advantage of a good home training. The value of such training, with its develop-

ment of womanly character and qualities, cannot be overestimated in this work.

In admitting nurses to our schools, we require not only the two years of high-school work, but also evidence of this careful home training, together with a definite knowledge of housekeeping duties. With such preparation, we feel fully justified in using our nurses for legitimate nursing purposes, requiring only such work of them as properly belongs to nursing, and do not keep them for weeks at a time cleaning marbles and brasses or preparing vegetables under the time-honored delusion that "it is part of their training."

Our experience is that high standards and strict entrance requirements bring larger and better classes of applicants. Each year has brought us increased applications for entrance and a larger number of high-school students.

We give a three-year course of training, which includes three months of probation, although the entire first six months is considered as a preparatory course.

THE CURRICULUM.

The curriculum of the school is briefly outlined as follows:

as follows:
Preparatory Class.
Anatomy and physiology
Solutions 7 "
Practical nursing
Theoretical nursing24 "
Preparatory materia medica 6 "
Nursing ethics and hygiene
Principles of cookery and dietetics20 "
Bacteriology and urinalysis
Junior Class.
Anatomy and physiology continued20 hours.
Principles of cookery and dietetics20 "
Surgical nursing and bandaging
Obstetrical nursing, practical 6 "
Intermediate Class.
Medical diseases and contagion 7 lectures.
Surgery10 "
Obstetrics
Gynecology 4 "
Pediatrics 5 "
Eye, ear, nose, and throat 5 "
Materia medica, regular
Senior Class.
Massage, hydrotherapy

Advanced nursing lectures, lectures on nursing

topics of day and current events......12 "

¹The fourth paper in a series of eight on the Conduct of a Small Modern Hospital. Next month, "Hospital Housekeeping."

The course of instruction is given according to the following arrangement:

the source was described as a second
Nursing ethics
Hygiene
History of nursing, with lectures on Superintendent.
special nursing topics and current
events
Theoretical nursing
Practical nursing
Solutions Assistant
Preliminary materia medica superintendent.
Practical obstetrical nursing
Practical ward surgery
Surgical technic
Bandaging Surgical supervisor
Massage and hydrotherapy Special hydrotherapy nurs
Dietetics-chemistry of food Hackley Manual
Cookery-preparation of invalid diet. Training School
Anatomy and physiology
Materia medica—regular and homeo-
pathic
Medical diseases
Contagious diseases
Surgery Doctor's lectures.
Gynecology
Obstetrics
Children's diseases
Bacteriology
Urinalysis
Eye, ear, nose, and throat

We have a nine-hour day, but the nurses are on actual duty only fifty-six hours per week, each nurse being allowed two hours' time off duty and one hour for meals daily. They also have one half day each week and the full half of each Sunday. A pupil nurse on special is always allowed eight consecutive hours rest daily and a day off for each week on the case. Night nurses have a term of six weeks' duty as juniors, with three days time off when the service is terminated, or eight weeks as seniors, with a four-day relief.

As much of the theoretical and the practical training as is possible is embodied in the first six months' preparatory course, so that, by the time it becomes necessary to put a nurse on night duty, she has a thorough understanding and working knowledge of the ordinary duties required of her.

Nurses are admitted between the ages of 20 and 35. With the exception of maintenance, textbooks, and uniforms, when the probationers are accepted as pupil nurses, there is no compensation during the first year.

During the second year the nurses receive a monthly allowance of \$7.50, and during their third year, \$15. Personally, I strongly favor an arrangement for a small allowance during the last two years of training, as it provides the pupil with a certain sum of spending money, which is her own and often goes far toward smoothing the path of splendid women who otherwise would have their sufficiently trying work made even

harder by financial problems. We find that the absence of any allowance during the entire first year does much to discourage the too mercenary mind.

When a candidate makes application for training, we first send the usual forms of application blank, physician's certificate, etc., to be filled out. If these, together with references, are satisfactory, arrangements are made for a personal interview. As most of our applicants are from this state or its immediate vicinity, it is usually possible to arrange for such a meeting. So much more can be determined as to the desirability of an applicant through one very short interview than through endless letters and references, that it almost seems as if no superintendent could really afford to admit as nurses women whom she had never met; for we all realize how important personal appearance, good bearing, and a refined voice are in this work, and we also realize how very misleading references from interested friends are apt to be.

When a class of probationers enters training, all entrance credentials, application blanks, and references, together with entrance examination papers, are filed, each set in its own large envelope. On the outside of these envelopes are places for the nurse's name, dates of admission, acceptance as pupil nurse, and graduation. These latter are filled as each event occurs. During her entire course of training, any communications from or about the nurse are also filed in this envelope, so that, should any question arise concerning these points, the papers are all together. As each class completes training, these envelopes are placed in a large outside wrapper, marked plainly, and sent to the record room, where all hospital papers are filed, each in its own department.

In accepting a probationer, some of the points which we consider especially are the character of her work, the matter of kindness and attention to patients, her appearance and personality, her health and physique, the interest displayed and improvement shown in the work done during probationary period, her personal attitude toward others, and her disposition under criticism, which is always a great test of the fine woman.

BREAKING IN PROBATIONERS.

Two classes of probationers are admitted yearly—one entering September 1, the other February 1. In the first two weeks after admission they are not allowed to be on the wards for more than one or two hours a day. This is only long enough to permit them to become, through observation, somewhat familiar with hospital conditions and customs. During this time they are not allowed

to wait on patients at all, but are shown how to keep a ward in order, how to care for flowers and patient's belongings, and other minor details.

Their hours in the ward and duties there are gradually increased during the next two months until at the end of their third month they are in the wards from six to seven hours daily, except when having their half day or Sunday off. During this time they are having daily lessons in every kind of practical nursing, and are taken by the assistant superintendent into the wards, where they are taught to put into practice the latest lesson given by being allowed to do the work under her supervision.

During their third month they are in the wards several hours daily, and the head nurse, who, it must be remembered, is a third-year pupil nurse, gives their work personal supervision as directed by the assistant superintendent.

At the end of their third month an examination is held on all subjects taught up to this time. If this is passed satisfactorily, and if her practical work and personality are also considered satisfactory, the probationer is accepted as a pupil nurse.

The superintendent always meets a new class of probationers personally, and gives them an informal talk of welcome and encouragement. This is followed by a weekly class in ethics, which can be made to cover many important and necessary do's and don'ts. The superintendent also personally accepts the probationers as pupil nurses, seeing them first together as a class and later individually, at which time it is generally possible to give each one a few words of advice and help along the particular line apparently most needed.

NURSING RECORDS.

Apart from class and examination papers, which are kept separately, three general record books are used for the training school. The first is the daily time book, in which the hours off and on duty for each day are entered, with comments as to extra time off, time lost, sickness, etc., noted in detail. We also have a daily register, which is a record of the service to which each nurse is assigned. This is kept in a large record book, marked up daily, each double page covering the entire record for one month.

In our "nurses' history record" we have two pages devoted to each nurse, the pupil's name being entered in regular sequence according to seniority. On one side is the name and address of the pupil nurse, the name and address of her nearest relation, dates of entrance, acceptance and graduation; also of vacations granted and other necessary details. On the other side of the page is the service record, transferred at the end of each month from the daily register sheet. All

night duty service is entered in red ink, thus making it easy to pick out.

In addition to these records, two separate sheets showing the totals of work in every department for each nurse are kept on the superintendent's desk. These totals are made out and totaled at the end of each month, and, in making any change of service, it can be seen at a glance where the nurse should next be sent. On this list is also kept the number of obstetrical cases each nurse has had, the total amount of special, the number of day and night duty, and other details of service. Nothing could be more simple and convenient or of more assistance in securing fair service for the nurses than lists ready at all times for instant information and comparison. Except in cases of emergencies, all changes of service are made by the superintendent.

THE NURSING AND TEACHING STAFF.

Our official staff consists of the superintendent of the hospital and training school, the surgical supervisor, and night superintendent, all registered nurses; also a graduate dietitian. school averages about twenty-two pupil nurses, and we have also a graduate nurse in our hydrotherapy department and a visiting nurse for social service work. The larger part of the teaching and the actual nursing supervision are in the hands of the assistant superintendent. By having this part of the work at all times in charge of one capable and responsible woman, who gives each nurse personal supervision, splendid results are secured in the training of nurses. In the operating room the instruction in surgical technic is given, of course, by the surgical supervisor, and while on night duty the nurses are entirely responsible to the night superintendent, receiving all necessary instructions from her.

We have a special arrangement with the Hackley Manual Training School, of this city, for the teaching of dietetics and cookery to our nurses in their beautifully equipped domestic science department. This is a courtesy extended by the Board of Education and one greatly appreciated by the hospital authorities. Twenty lessons each in theory and practice are given here, in addition to which each nurse spends at least six weeks in our special diet kitchen, working under the direct supervision of our dietitian.

Our staff of doctors gives to the nurses a most thorough and valuable lecture course, in every case the service being entirely free from charge. We also have the advantage of having all anatomy and physiology taught by one of our physicians, who was for many years instructor in these subjects in one of the large state universities. Too much cannot be said of the kindness and courtesy of the staff in regard to our lecture course, and in the pains taken to conform with any suggestions made them which might add to the value of the lectures from a nursing standpoint.

RULES FOR NURSES.

In common with all schools, we have various sets of rules-one set for the nurses' home, which is read to the probationers during their first week of training. Those rules pertaining to the hospital are read and explained carefully later as the nurse gradually assumes ward duties. It is our aim to make the smallest possible number of rules, and to live strictly up to those which we find it necessary to make. So far as possible, we try to have our school self-governing. One of the first things told a class of probationers is that every nurse in the school is on her honor; that if it is found that a nurse cannot or will not voluntarily act in a dignified, honorable manner, she will be unable to remain in the school, as there is neither any intention nor any desire on the part of those in authority to do detective duty. We expect every nurse who enters the school to be a woman of honor, and always treat her as such while she remains with us.

There is, however, a special set of rules which we have found it necessary to adopt for the help and guidance of nurses in the arrangement of their work. As our head nurses are pupils in their third year of training, we found that many times they did not fully realize their responsibilities, and therefore the following rules were outlined for their guidance:

Duties of the Head Nurse.

The head nurse is to be on duty promptly at 7:00 a.m. and immediately to assign morning work to senior and junior nurses.

To take report from night nurse and see that charting room and lavatory are in order, and fresh towels ready for doctor's use, nurses' table in order, etc.

At 7:15 to take charge of diet kitchen and at all times to personally supervise and assist in serving trays, making sure that all food is hot, nicely cooked and served, and that each patient is getting correct diet as prescribed by doctor; to carefully instruct juniors in proper tray service and to see that all helpless patients are fed; to make a room to room trip after trays are served to see that patients have eaten and enjoyed meals.

To give all medication occurring before and to 9:00 a.m. inclusive.

To take all T. P. Rs. up through that hour.

To make up all drug lists, requisition lists, etc.

To write up all charts to 9:00 a.m. inclusive.

To be entirely responsible for cleanliness of drug closet.

To prepare surgical trays and take charge of surgical dressings.

To make rounds with doctors and superintendent, reporting carefully about patients.

To see that all doctors' orders are carried out at the earliest possible moment, and to carefully supervise and direct nurses doing same, and to assume care of certain patients whenever necessary.

The head nurse is absolutely responsible for the comfort and welfare of all patients intrusted to her care.

She is to practice and to insist upon the greatest care and economy in the use of all hospital supplies.

She is to report any failure to carry out doctors' orders, with reasons for same, at earliest possible moment, also any sudden change in patients' condition or any high temperature to house surgeon and superintendent.

To inspect all beds and backs of all bed patients at least once daily.

To immediately report any accident happening to any patient under her charge to house surgeon and superintendent.

To write up night orders and diet slips.

To give personal supervision to all work done by nurses and orderlies or ward maids; to see that work is arranged so that day nurses can get off duty promptly at 7:00 p. m., and never to leave her ward at night until her nurses are also ready to go off duty, unless told to do so by supervisor.

To report to dietitian immediately any unsatisfactory diet, shortage, etc., and, in the event of repeated trouble, to report to supervisor; to make out all diet lists, ordering only the probable amount of extras needed, and practice judgment and economy in ordering of food and supplies.

To get a signed order from superintendent for any rush or special work from laundry.

To see that linen is carefully used, and to have all torn or ragged articles placed in a bag for repair or to be replaced; to see that all private room patients are bathed every other day and ward patients twice a week; bed patients given alcoholic rub every night.

In the absence of the senior nurse, her duties are to be assumed or arranged for her by the head nurse.

One of the most important duties of the head nurse is to keep the assistant superintendent informed at all times about any matter of interest or importance on her floor; any reports or complaints from patients or doctors must always be immediately referred to assistant superintendent; also any shortage of working materials, medicines, linen, supplies, etc.

The head nurse is to insist upon order and quiet at all times, and must eliminate all unnecessary noises, such as loud talking, rattling of dishes, utensils, etc. The head nurse should stand out as a leader, from the standpoint of efficiency, ethics, and good breeding, by her own personal example and precept.

Duties of the Senior Nurse.

The senior nurse is to assume duties and responsibilities of head nurse when she is absent or off duty.

To take charge of the most ill patients as assigned by head nurse. (Probably three, or in emergencies, four.)

To take all T. B. Rs. except those previous to 9:00 a.m. To assist when necessary in making rounds with doctors and in preparing dressings, trays, and doing surgical dressings.

To give all unusual or special treatments.

To prepare patients for operation, and take them to operating room when necessary.

To be responsible for caring for work of juniors when they are off duty.

To see that all charting after 9:00 a.m. is kept up at all hours of the day.

To keep dressing trays set up and look after all sur-

gical instruments and supplies, and see that all such supplies are left ready for the night nurse.

Duties of the Juniors.

The juniors will be responsible for any of the senior work during absence of senior, or any other work arranged by head nurse.

To care for patients as assigned by head nurse; to do work thoroughly and quickly, and have patients comfortable and well cared for at all times; also to have private rooms and wards in strictest order.

When two juniors are on a floor, one shall be responsible for the diet kitchen and linen closet, and the other for the bath rooms and utensils.

To give any medication or treatment directed by head nurse, and, if directed to do so, to keep up patients' charts after 9:00 a. m.

To keep head nurse carefully informed as to patients' condition at all times. If any bed patient shows the least tendency to bed sores, same to be immediately reported to head nurse.

Duties of Probationers.

Probationers are to dust rooms, arrange flowers, put empty beds and rooms in order, and care for bath rooms, diet kitchen, linen closets, and chart rooms; also to have such other duties concerning the personal care and treatment of patients as arranged for by superintendent with head nurse for the application of the principles of nursing as taught.

We endeavor to teach our nurses to be most prompt and careful in carrying out doctors' orders. The head nurse or senior on the ward makes the rounds with the various members of the staff, waiting on them as necessary. Before leaving the floor the doctor writes his own orders in the order book or requests the house physician to do so. The nurse who carries out the order initials it in red ink and also notes the hour. By means of this simple plan it can be immediately ascertained which nurse carried out the order, should there be any question concerning the matter.

Complaints from doctors are generally made personally to the superintendent or her assistant. Sometimes a complaint from a patient is made to the head nurse, who immediately reports to these officers for their investigation. Should a serious report be made concerning a nurse, she is requested to make her reply in writing. If a serious mistake has been made, the nurse is immediately taken off duty by the superintendent until the matter has been fully and fairly investigated.

DISCIPLINE AND DISMISSAL.

The superintendent is allowed power of dismissal, but this is never done without first reporting to the executive committee of the hospital board, and giving the nurse an opportunity to meet them and justify herself if possible.

In the third year of their training, our head nurses are given black bands for their caps. The greatest punishment which could possibly befall a third-year nurse is to have her black band taken away temporarily. In over six years this has occurred only twice, and it can be stated without the least exaggeration that the whole school actually suffered for and with these nurses. In many schools the system prevails of suspending a nurse as a punishment. She generally goes home and has a good time, receives much unwise sympathy from her family, and is a rather demoralizing element when she returns. Our method of discipline is to extend the nurses' period of service for any serious misdemeanor from two to four weeks. This punishment is so far from popular that it has been necessary to inflict it only twice in six years.

NURSES AND INTERNS.

The matter of the relations of the nurses to interns is one that does not trouble us greatly, as we usually have but one intern on duty. He is expected to be absolutely professional while on duty, and at other times has the same social privileges that any of the nurses' men friends are allowed. It has never yet been found necessary to formulate rules on this subject, nor have we ever heard of any rules that effected anything but a tendency to deceit and the desire to break them on the first possible occasion.

"THE HOME."

The nurses' home life is made as free and happy as possible. We have the advantage of large and very beautiful hospital grounds, with a good tennis court for the nurses. Our generous benefactor died before his plans for our benefit were completed, and so we are without a nurses' home built in accordance with our beautiful hospital, but it is hoped to build such a one as soon as financial conditions will permit. In the meantime we own a handsome, well-built private residence about one block from the hospital, with a cottage annex for additional bed room space. The home has large parlors and corridor which can be thrown together, and which give sufficient room for the many informal dances and parties that nurses always so greatly enjoy. The nurses are allowed to see their friends socially at the home and are encouraged to consider it in every way as a real home, with all customary home privileges and enjoyments.

Our nurses enjoy two rather unusual privileges, which they greatly appreciate. One is that their beds are made for them every morning by the nurses' home maid. I can distinctly remember how, when a junior nurse, it seemed to me like the very refinement of cruelty to be forced to make my own bed before going on duty when for a very certainty I would have to make so many

others during the day. This is something that is done for the nurses' comfort in very few schools. It sounds like a little thing, but—ask any pupil nurse who is obliged to make her own bed in the morning, and see what she says. Another reason for doing this is that our teaching of general hygiene looks rather like precept than principle when we shut our eyes to the fact that we permit nurses to care for their own beds in the hasty manner necessary when the rooms are to be left in perfect order before going on duty, which is the general rule in training schools.

The other privilege is that nurses having Sunday morning off duty have a breakfast of toast,

coffee, and eggs sent over to the home about 8:30 a.m. This gives them a chance to sleep late if they desire to do so on Sunday morning, with the comforting assurance that their breakfast will not be forfeited as a result.

These are little things, but, after all, it is consideration in just such ways that goes far toward keeping nurses contented, loyal, and happy. A nurses' home should stand for a home in the highest sense of the word, and be a place where they are allowed every reasonable privilege and comfort, with the liberty of being noisy and frivolous to their hearts' content after the necessary repression of the day.

PROGRESSIVE DETAILS OF ADMINISTRATION OF A GIRLS' INDUSTRIAL HOME.

Correct Physical Condition Preliminary to Training in Spiritual Life—Ideals of Beauty Inherent but Uncultivated in Children—Family Life, Affection, and Kindness Prerequisites.

BY MRS. A. M. CLAY,

SUPERINTENDENT STATE INDUSTRIAL HOME FOR GIRLS, CHILLICOTHE, MO.

PAPER I.

TO begin at the Beginning is to start with chaos and gross darkness, and this is the condition most frequently found by a superintendent on assuming the duties of administration, for it is the general tendency, one might almost say custom, of the inmates of industrial (or reform) schools to live up to tradition and previous practices, and try out, in ways too multitudinous to enumerate, "the new superintendent." Unless, therefore, one possesses overwhelming love for humanity, a comprehension of its inherent and cultivated possibilities, the capacity for anticipation of its designs, a courage which is eternal stranger to either mental, moral, or physical fear, a fixedness of purpose which nothing short of the premature arrival of the Almighty's judgment day can change, and a firmness of faith that ultimate success must necessarily crown all worthy efforts put forth for the benefit of mankind, it were well to pause ere undertaking a task of such enormous endeavor; but, possessed of these, the school and its possibilities are all your own. though considerable time will be required to so prove.

PHYSICAL CONDITIONS.

The first requisite to right living, also proper administration of affairs, is wholesome, sanitary surroundings. Nothing in the Scripture is more true or necessary than the injunction to recognize

"first those things which are natural, after that the things which are spiritual." Every child has an inherent love for the beautiful, although in the delinquent child this has been, through environmental conditions, uncultivated, and therefore it has become mischievous and destructive. To teach, then, such children true beauty of every kind and form, and to inculcate within them habits of constructiveness and thrift, is to refine and elevate them. This teaching we began by organizing in each family a "Paint Club," whose members soon learned to paint and stencil beautifully, so that every wall (which was formerly begrimed, dingy, and defaced) is now wearing a beautiful, cheerful coat of very delicate green, with stenciled borders selected as follows: for family sitting rooms and bed rooms, borders of conventional designs in dark green; for certain halls, tulips in colors; and for dining rooms, grapes and vines properly tinted. The bed rooms were decorated as artistically as any other portion of the buildings, and no spot has been allowed to go unrepaired or unimproved.

All vermin is a thing of the past. A cockroach, which is the "bugbear" and menace, insectly speaking, of every institution, is rarely seen; but this absence of the pest is due, as is success in all things, to eternal vigilance. An institution, properly administered, should have no show cottage, nor those of inferior grade. If there is one place in the world more than another where all "should

¹This is the first of a series of seven papers, one for each month, on the conduct of an industrial home for girls, applicable to all similar institutions.



Fig. 1. State Industrial Home for Girls-Central group of buildings.

share and share alike," it is in the material, mental, and moral benefits, and opportunities and conditions of an institution, for nowhere is the feeling of jealousy engendered so easily, nor the charge of partiality made more quickly, than there.

The oldest building, therefore, should be overhauled, that it may be as cleanly, convenient, and as beautiful as the newest, if this be possible, that every one of its inhabitants may feel a community of spirit, which shall bode well for the conduct of affairs. oiled and varnished, excepting those in the kitchen and laundry, which, being situated on the first floor in each family building, and having good light and plenty of ventilation, were very properly left to be scrubbed. The care of floors and woodwork was thus reduced to a minimum, as the wiping of dust each day and the careful oiling of the floors with a good floor oil once each week has been found quite sufficient to keep them in perfect condition.

An especially good arrangement was obtained in the school building which had been built

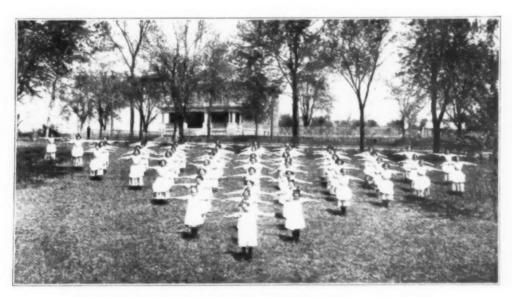


Fig. 2. State Industrial Home for Girls-Calisthenic exercises on the grounds.

To scrub wood floors throughout an entire building daily is a most unsanitary and undesirable thing, though this was once a custom in this and in many other institutions; but the time can be so much better employed at sewing, cooking, weaving, washing, school or orchestral work, and in other departments, that every floor has been

with a small room adjoining each school room (for what purpose was not evident). Each of these was fitted up with shelves for supplies, a lavatory, and a toilet. In any school containing but one sex this is not only possible, but very excellent, disciplinarily speaking, as well as being sanitary and convenient.

The old cells and punishment rooms, in use in the cottages for twenty years previous, soon came to be no longer needed, and were fitted up with shelves and converted into fruit cellars and paint supply rooms. Attics filled with old clothes, discarded furniture, etc., were cleaned out, plastered, painted, and converted into family clothing rooms.

Back porches were rebuilt, latticed to the ground, painted, and vines trained on them. Family sitting rooms were remodeled, and the interior of every cottage refurnished—"upstairs, downstairs, and in every lady's chamber."

The grounds next received attention. A park was fenced off, a band stand and grand stand built, and regular field days inaugurated.

During all of the time that the improvements and repairs of buildings were being made, two other important factors in progressive administration were not, however, being overlooked, but, weight shoes, and in black hosiery; the satisfaction in knowing one's self to be not only becomingly appareled, with hair modestly dressed, and without a garish display of jewelry, was a question of only a little time and some heart-to-heart talks. The result was a blue gingham, trimmed with white braid, and ruffled light calico lap aprons for the week days, and a white shirtwaist suit of "near linen" for Sundays. The effect of this simple, dignified apparel, with a better quality of underwear, was soon apparent, and did much toward marking a new era in institution conditions.

FOODS.

The question of greater variety of foods and better balanced was one of considerable discussion, but finally a general menu was selected, with the understanding that as many variations and additions as were possible could be made. Cer-



Fig. 3. State Industrial Home for Girls-The ball field.

on the contrary, were being steadily changed and increased—namely, the clothing and the food.

CLOTHING.

No delinquent, devoid of pride, can ever be reformed. The first principle—that of pride in their dwelling place—must be conjoined to that of pride in their personal appearance. Brown denim dresses, aside from being ugly in appearance, made their wearers so in fact, as they were painfully warm and uncomfortable as well as unsanitary. These constituted the kitchen and laundry garb as supplied by the institution. Heavy shoes, gray stockings, and a motley array of dresses of all styles and materials made up the garments with which they were clothed. Gaudy jewelry galore and hairdressing in most unusual fashion were evident on every hand. To make plain the benefits of uniform clothing in desirable color and material; the pleasure in neat, lighttain substantials, vegetables of all kinds, meats and fish, fresh, dried, and canned fruits, and cereals were included in the bill of fare, with cakes, pies, and other pastries on Sundays and holidays. On Thanksgiving and Christmas days delicious turkey dinners, with full and complete accompaniments, have for the past six years graced our dining tables, and often have we been told on these occasions by various girls that "this is the best ever!" One thing always insisted upon was that all foods be well cooked, properly seasoned, and appetizingly served, and that they be furnished in abundance.

The health conditions have been remarkable. No epidemics or contagion, excepting measles once in one family, have been present in the last seven years, and no death, excepting one, over twenty years ago, of peritonitis, has occurred in the institution. We believe no other institution

of as long standing can boast the total absence of a cemetery.

No "restricted diet" is ever permitted as a disciplinary measure, and no effort is spared to evidence our desire to make our girls healthful, robust, self-reliant young women, capable of undertaking the duties of self-support.

To sum up briefly the items of administration, we would place them in order as each came, in turn and in seeming importance—housing, clothing, foods, health—knowing that as a house must be builded before its occupancy, the cup fashioned first on the outside, the body created before the spirit inhabits it, even so must all those things which are material and natural first receive complete care and consideration if one is to do their duty to the full.

GENERAL TORNEY'S "CONCLUSIONS."

Annual Report of the Late Surgeon-General—A Pathetic Summary of Progress and Achievement.

The 1913 annual report of the surgeon-general of the army is just off the press. It is a comprehensive volume of 300 pages, treating of the improvements, administration, and needs of the medical department of the United States army during the year.

There is a most pathetic, and yet a most encouraging, message in one of the pages of this report, headed "Conclusion," and was written by the late surgeon-general in person, and, as will be noted, was intended as a summary of achievement in administration, on the eve of his retirement under the age limit rule. It was General Torney's "Goodbye," and those of us who were so favored as to know him well will read the message as his own statement, however modestly put, of his contribution to the progress of medical science in a constructive, administrative way. It is more than worth publishing, if for no other reason than it is a calm summary of medical progress as applied to a definite class of society. The part of the report referred to as under the head of "Conclusion" is as follows:

"This report is the last which will be signed by the present surgeon-general on account of his retirement for age during the current fiscal year, after an incumbency of five years four and one-half months. It seems advisable, therefore, that a brief summary be made of the work done by the medical department and of the results obtained under his administration.

work done by the medical department and of the results obtained under his administration.

"1. Typhoid fever, the most formidable of all camp diseases in the past, has apparently practically ceased to be a cause of noneffectiveness in our army. This, as is well known, is the brilliant result of the immunization of our army against this disease by the typhoid prophylactic. It was demonstrated in the maneuver camp at San Antonio in 1911 that it was entirely practicable to immunize a division upon mobilization without materially interfering with the military duties. The same can be done for any number of divisions. Thus, if at any time it becomes necessary to mobilize a large army of militia and volunteers, they can be properly protected against this disease in a short time after arrival in camp. The first steps in this campaign were inaugurated by my predecessor, General O'Reilly, in the latter part of 1908, and has been conducted to the present stage by the medical corps during my incumbency. I consider that, among the sanitary achievements of the medical department in preventive medicine, this measure for the prevention of this disease ranks second in importance only to the discovery of the method of transmission of yellow fever.

"2. It appears, as stated elsewhere in this report, that at last effective measures have been instituted to control the occurrence of venereal diseases. Practically the first note of this campaign was sounded in a circular letter from this office January 25, 1909. Since that time a vigorous campaign has been conducted, and interest throughout the medical department and the army at large has been aroused. The War Department was finally persuaded to take official action in 1912, and Congress, at the suggestion of this office, passed the act for the stoppage of pay in 1912. The statistics for the year 1912 and for the first six months of 1913 show that the results obtained are eminently satisfacory, and would indicate that we may hope for still more satisfactory results in the future. Great credit is due to certain enthusiastic medical officers for especially good work done during this campaign.

"3. Prior to the year 1910 among the native troops in the Philippine Islands, beriberi each year caused a large number of admissions to sick report and much noneffectiveness. This disease was also responsible for the greatest number of deaths, and was second only to tuber-culosis as a cause for discharge for disability. Experiments conducted by several observers, and confirmed by the board for the study of tropical diseases in the Philippine Islands, showed that beriberi occurred among peoples subsisting largely on highly-milled rice. As a result of recommendations by the board, orders were issued by the division commander and later by the War Department prescribing that only unpolished rice be issued and that a legume be added to the ration. Following the change in the ration, beriberi has practically disappeared from among these troops. Only three cases occurred in 1911 and two in 1912.

"4. As a result of constantly improving sanitary measures, the constantly noneffective and admission rates have steadily declined since the Spanish-American War. During the last few years, as the result of the antityphoid and venereal campaigns, these rates have decreased more rapidly, and in 1912 were the most satisfactory on record. This year, 1913, bids fair to eclipse all records, and it would seem at the present time that these rates this year would reach an almost irreducible minimum.

"5. Camp sanitation has been improved, simplified, and rendered inexpensive. It is being demonstrated each day that troops properly protected against typhoid fever and smallpox can live in camps suitably located, with the present method of camp sanitation, for an indefinite length of time with no increase in morbidity or mortality."

NEW TYPE OF TUBERCULOSIS HOSPITAL.

New York the First City to Have Special Institution for Surgical Cases.

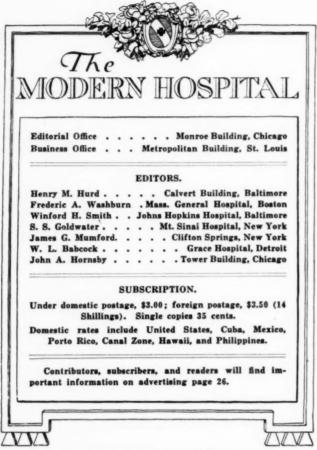
The new Seaside Hospital at Telawanna Park, Rockaway, N. Y., is the first attempt to build and operate a special institution for nonpulmonary tuberculosis, or what the doctors call surgical tuberculosis.

The Seaside project is an old and long-drawn out one. It had its initiation in 1906, when a fund of \$275,000 was raised in a country-wide campaign, in which the picture of "Smiling Joe," strapped to a Bradford frame, played a most important part. The city was offered the fund, provided it would find a site and operate the hospital. Only now the city is able to do this.

The hospital, when completed, is expected to cost about \$2,000,000 and have a capacity of 1,000 beds. Just now two pavilions for 150 children will be built out of the above fund, controlled by the Association for Improving the Condition of the Poor. Additions will be made as the city is able to appropriate the necessary funds.

The hospital will be devoted to the care of all tubercular cases, excepting those involving the lungs.

Ira C. Calef, a resident of Washington, D. C., has contributed \$10,000 as a New Year gift to the Heaton Hospital, Montpelier, Vermont.



Mental Cases in General Hospitals.

The pioneer work of the Albany Hospital during the past eleven years, in its hospital care of acute cases of insanity, has attracted much attention and deserves the study of other hospital managers. The activity of the service there is indicated by the admission and treatment of 341 persons during the year in a ward of about 30 beds, with an average residence of twenty-three days for each patient. Most of these persons came into the hospital ward in a critical condition, with the issue of life and death in the balance, and upwards of 50 percent of them were discharged in a recovered and improved condition. It is clear that a new field of usefulness to the public is here opened to the general hospital by which persons in the early stages of mental disorder, or apparently threatened with insanity, may without the formality of a legal commitment and its consequent disadvantages go to a hospital where they can receive prompt care and skilled treatment. In the past, for lack of such facilities close at hand, proper treatment has been delayed, and patients have generally remained at home until their condition had grown most serious.

The psychopathic ward of a general hospital places mental disease on the same footing as other bodily diseases and secures early care. If

the symptoms, often so alarming, are the result of an active poison in the body, like the toxic conditions developed in nephritis, typhoid fever, pneumonia, alcoholism, or surgical injuries, the possibility of a hurried and erroneous judgment that the patient is insane is thus avoided and prompt treatment is secured. If, on the other hand, a condition of delirium from active disease, often very terrifying to other patients, develops in the ward of a general hospital, the facility with which the sufferer may be transferred without exposure, to a place where he will receive the nursing and care which considerations of safety and proper treatment require, is of the highest importance. Whatever the outcome, prompt treatment has been secured with a minimum of peril and even of discomfort to the one most interested—the patient himself.

In every large general hospital the relief thus secured in its own wards by the proximity of a psychopathic ward can be readily imagined.

It is equally obvious that nurses may receive equal benefit if in the course of training they have an opportunity to become familiar with the nursing of patients in the different forms of delirium. In fact, most of the mishaps which occur in hospital wards are due to a lack of acquaintance on the part of the nurse with the difficulties and perils of delirious patients.

Is it not the duty of hospital managers in all cities where provision is lacking for the care of acute cases of alcoholism, insanity, or other diseases marked by active delirium, to set apart a ward for their accommodation?

HENRY M. HURD.

The Items in Hospital Efficiency.

I. INTRODUCTION.

For the past five years "hospital efficiency" and "hospital progress" have grown to be a fetish with some of us. We have talked and written in season and out about improved hospital conditions. We have instigated investigations here and there where we thought conditions were not correct. The people have become aroused, and have concluded that hospital conditions do need improving. Boards of trustees have awakened to the fact that their institutions are lacking in something. Many of us have inquiries coming constantly from all parts of the country requesting information as to just what they can do to give better service to patients and physicians and the public.

But there seems to be a general haziness in the situation, and want of agreement among us as to just what hospital efficiency means and what constitutes hospital progress. Some of us have pretty well-defined notions about what an efficient hospital is in this modern day and in the light of the possibilities of medical science. It is intended in this series of papers to give one individual's views of hospital efficiency.

In this first paper let us introduce the subject by stating the problem, if nothing else.

In a second paper let us take up one item of the problem, one that is perhaps the most important item in hospital efficiency of today—namely, service to the patient and the physician through the laboratory of pathology. We will discuss this from the standpoint of the large hospital and of the small hospital; of the general hospital and of the special hospital; of the municipal hospital and the sanatorium, for general as well as for special purposes.

In the next paper let us take up the problem of physical therapy in the hospital, outlining what can and what should be done in the field of physical therapy in the several classes of hospitals. It is a large subject, and is growing larger all the time as our drug departments are growing smaller year by year.

In still another paper let us take up the question of hospital diets. In this paper we shall have fairly before us the problem of foods versus drugs. Medical men are supplanting medication by the use of special diets given for special purposes under special conditions. The hospital has a large duty in regard to this item of hospital progress and efficiency, because medical men themselves, while perfectly conversant with the physiology of the digestion, with the chemistry of foods and with the pathology of their cases, are not well grounded in the fundamental principles of how their scientific needs must be accommodated under the physical limitations of the modern hospital.

In another paper we shall discuss nursing—not nursing from the nurse's standpoint, but nursing from the standpoint of the physician and his patient; the problem is: To what extent can and should the modern hospital support the doctor's treatment of his case by way of nursing? We have talked and written so much about nurses and nursing that the topic may seem to be hackneyed, and is hackneyed, but it has become so largely by reason of the fact that it is perhaps the most important item in the hospital care of the patient, and it has become hackneyed because so many of us have divergent views on the subject; but from the viewpoint of these present papers the question at issue may be considered almost an economic one. We all agree on what good nursing consists of, but there are limitations to good nursing created by the financial limitations in most hospitals. Then, by easy stages, the problem presented is: What may a modestly endowed, carefully administered hospital be expected to do for its patients to satisfy the demands of present-day medical science, and in view of financial and other limitations?

In still another paper I think we should discuss hygienic and sanitary conditions in our hospitals—not wholly ideal conditions, but conditions made possible by our financial limitations, conditions obtaining in old as well as new hospitals. What may the doctor expect for his patient in hygiene and sanitation in a hospital built long ago? What is good hygiene and sanitation in a hospital? It may be that this topic, too, seems hackneyed, but out of ten well-informed hospital people who are asked to give an answer to this question there will probably be nine different answers, or perhaps ten.

Still another topic that we will endeavor to discuss will be out-patient service. This takes in the dispensary, visiting nurse work, follow-up system, public welfare service, to which every hospital must now commit itself to the limit of its financial resources. No longer can we regard our institution as a place limited by four walls; wherever there is a human being, there is a health problem; and wherever there is a health problem, there is work for the hospital. We know quite well what is ideal as regards these items of hospital efficiency, but how shall we answer the administrator of a small, poorly endowed, struggling institution who asks, "What can I do in this missionary work, in this broad public service, with our small means?" It will be attempted in this paper to answer that question. It need not be expected that we shall propose impossible things, but, if the modern hospital is an all-pervading community force, then the community as a whole, and each individual separately, must do its and his and her part toward helping the hospital serve its magnificent purpose. How can these agencies be correlated? Let us try to answer that problem also.

We have reserved perhaps the most perplexing of all these problems for the last—namely, social insurance. Little by little the world is coming to concede that each member of the community owes to every other member a helpfulness and guardianship that will minimize his suffering and his wants, and make him independent in so far as his creature comfort is concerned, to the end that he may go forward upon the career that he has assigned himself, or that has been assigned to him, and bring to it the largest possible fruitfulness, without the necessity to think what may

happen to him tomorrow in the event of sickness or misfortune.

Will it be said that we have undertaken a monumental task in the discussion of papers of the magnitude of these proposed? Let it be said in extenuation that it is not proposed to settle anything, but rather to lay the lines for a discussion of problems that perhaps all of us together may settle. These papers will be the individual opinion of one person, limited by his ignorance, want of fundamental understanding of conditions that perhaps others have mastered; but they will be honest opinions and well meant, and it is sincerely hoped that they may lead others, capable of higher thought, to calmer deliberation and a more studied judgment to help solve the problem.

JOHN ALLAN HORNSBY.

The Future of the Family Doctor.

About the year 1765, during the reign of George III., of convivial memory, the wigmakers of London petitioned his majesty, begging that he would restore to his royal head the peruke that he seems to have discarded as an unnecessary handicap to his freedom of action. As is the wont of toadies and tuft hunters everywhere, fashionable England had followed in the footsteps of their royal master, discarded the wigs universally worn up to that time, and the wigmaking business of England came upon a dearth of orders that threatened its very existence.

The petition of the wigmaking guild monopolized the attention of the people, occasioned debate in Parliament, and nearly all England took sides. It was a calamity-threatening situation, and the continuance in power of the ruling party hung upon its popular solution.

One day, while yet the controversy waxed fast and furious, another petition was laid before the throne, praying that his majesty would wear a wooden leg, that by his imperial example the fashionables might all be induced to wear wooden legs, and thus greatly aid the craft of body carpenters, whose business was almost destroyed by a long spell of peace that had reigned in the land. There was a national guffaw at the expense of the wigmakers, who thereupon went into other occupations, and lived happily ever after.

These historic reflections are occasioned just at this moment by fear, expressed in some of the medical journals, that the family doctor—God bless him!—is likely to be driven into permanent exile by modern hospital activities, social insurance, visiting nursing, and kindred modern expressions of a new social order.

The family doctor is really worth our most serious consideration, not alone because about him

cling some of the dearest memories of all of us, not only because the mere mention of him takes us back to the hallowed scenes of our childhood, onion poultices, castor oil, colds, and green-apple colic, but because we really *are* moving somewhat rapidly into unsounded social depths, and it behooves us to let down a lead occasionally, if only to be assured against the proximity of social rocks and shoals.

What really is to be the future of the family doctor? The Modern Hospital, in its salutary bow upon entering the field of hospital service in September last, predicted that eventually there must be a bed in a good hospital for every sick and hurt man, woman, and child. In this evolution, which we have no doubt is a consummation of the not far distant future, the family doctor must be disposed of in some way. If he is no longer needed in the new order, he will disappear, just as the tail of the human animal disappeared when the passing of the cocoanut age made it no longer necessary for him to swing from limb to limb to find his food.

But we do not think the family doctor is to disappear, but merely that he is to be metamorphosed into a very necessary piece of the social machinery of the future. No one expects that for every ache and pain the father or mother or child of the family will be rushed to the hospital; but the doctor will be needed, and he will be called. Perhaps the ailment is only some fugitive indisposition that can be cured by a day in bed or an active drug; and the family doctor will prescribe whichever is required. But if the illness persists, and, refusing to be dissipated after a few days, assumes the proportions of a definite pathology, it will be the part of the family doctor to order the patient to the hospital. where he can have access to the vast and constantly growing technical apparatus, by which a definite diagnosis can be arrived at, and by the skilled application of which he can be treated under the eye and direction of the particular specialist trained in that branch of medicine.

When that day comes, the general practitioner will have no place on the hospital staff; he will be the connecting link between the home and the hospital. Whether he shall collect his fee, as he does now, from the patient or his family, or whether from government insurance funds, as the panel doctor of Britain collects his under the Lloyd-George laws, or from one of several sick funds, as is the present practice in Germany, depends very much on how far paternalism runs riot in this country as a reversal of our present social principle of individual initiative.

In the meantime, states, counties, and towns

are building hospitals to take care of their sick. In Massachusetts, probably the most solicitous state in the union for the welfare of its sick, only 13 percent of the sick who had occasion for a physician's services last year were cared for in hospitals; in Birmingham, England, in the same time, 11 percent of the sick went to the hospital. Many of the states have enacted laws compelling their constituent communities, counties, and towns to build hospitals.

Medical education grows apace. Fewer and better schools are the order of the day. Men and women are going into medical practice better equipped than ever before, and fitter to carry the responsibilities that go with the war for human health and happiness.

The whole world is racing for the front in every line of endeavor; the fittest will arrive—the incompetents will fall and be trampled upon. Let us not hold back human progress—even for the old-time family doctor; those of him who are here now will stay until, in the fullness of time, they are gathered to their fathers, and the new family doctor will be in step with his day and generation. Like water and all other things in life and nature, each one of him will find his level, and that level will be ever higher and worthier; and the doctor, the human expression of man's highest and holiest duty toward man, like Abou Ben Adhem of old, will lead all the rest.

Salaries of Superintendents.

Probably the poorest paid professional man in this country, as a class, is the hospital administrator. There are individuals of conspicuous ability and who have been fortunate in their environment who get very good salaries, but the great majority get paid for their services far less than any class of people of anything like their ability.

This statement does not refer to those untrained men and women who, through influence and favoritism, or through fortuitous circumstances, obtain their place. A clergyman who can be spared from the pulpit is made superintendent of the hospital whose building funds he has helped to raise; a widow, known in the community as a "good manager," is made superintendent of the little community hospital because she will work cheap, is a good housekeeper and a good cook. Sometimes such a man or woman develops into a good hospital superintendent—good in so far as the physical parts of the administration are concerned. But when we talk about a hospital superintendent in this modern day, we must mean one who has gone through the long grueling training necessary to fit him or her to direct the activities of a hospital in a way that will satisfy modern

scientific requirements, and it is these who are woefully underpaid.

The modern hospital administrator is a man or woman of good primary education, on which to build a highly technical training; he or she must know a great deal about physics in order to master the intricacies of hygiene, sanitation, alterations, and repairs; must have a medical training or a nurse training, in order to direct the work for and on patients, and furnish the facilities which doctors require for their purposes; must have a working knowledge of the x-ray, hydrotherapy, asepsis, special diets; must know bookkeeping, in order to direct the cost and accounting system: must be thoroughly informed concerning the record-keeping: must know about hospital supplies and how to buy them to the best advantage; finally, he or she must be a past-master in the art of getting along with most difficult classes of people—help who are disposed to soldier and pilfer. doctors who want what they want when they want it, a public strung to the highest nervous pitch because their loved ones are sick and suffering, trustees generally poorly informed about hospital activities, and each one of whom wants to "boss things" in some part of the establishment. Add to the training in all these directions the ability to know what is going on in the institution twenty-four hours of the day, a constitution that will permit loss of rest over long hours in emergency, the tact that knows just what to do instantly and under the most trying circumstances. and we have a hospital administrator.

Sometimes a board of trustees, cock sure of its own infallibility, employs a superintendent at a clerk's wages, on the excuse that in any event they themselves must run the hospital, and all they need is some one to carry out their orders. Not long ago the writer was asked to help find a superintendent for a municipal hospital of 300 beds in a city of a quarter million of people. They were paying at the time \$1,000 per year, but the incumbent of the office "was not satisfactory," and the president was "compelled to visit the institution twice a day"-once to give orders, and again to see that they were carried out. No one could make him see that the best administrator alive must have failed under those circumstances, but he finally agreed to remain away from the hospital for a week "just to see." That president is now numbered with his fathers; that superintendent is getting \$4,000, about half of what he is worth, and he has a real hospital, in which he is the master every minute of the time.

In a factory or a department store, or any mercantile business, the manager who knows as much about the business in all its angles as a good hospital administrator does about his gets a salary of from \$5,000 to \$25,000 a year—and he deals only with money and its equivalent in merchandise. If he makes a mistake, it may cost a few dollars. If the hospital administrator makes a mistake, it may cost a life, or it may alienate the support of the institution.

Boards of trustees do not run hospitals. Point out to us a good hospital, and we will show you a good superintendent—either the one in it at the time, or the one who made it a good institution. There are some excellent hospitals that have poor superintendents, but in every case it will be found that some capable man or woman was responsible for the excellence. Take the best hospital in this country that any of us knows about—do we know the name of a trustee in it? And whose name do we know in connection with it? That of the superintendent, every time.

Then let us begin to think and talk about better salaries for trained, capable hospital administrators.

Beaumont Approaches Its Problem Correctly.

Physicians of Beaumont, Texas, are going the right way about the business of getting a new public hospital for their community. The Jefferson County Medical Society has the matter in charge, and began by showing that 250 free beds are seriously needed in the community, which now has 130. They have recognized the mandatory character of the McGregor-Colquitt law, passed at the last session of the state Legislature, which provides that every county with a population of 10,000 shall build and operate a general hospital for the care of all classes of patients-tuberculosis, surgical, medical, children, maternity, and communicable. They have, based on this law, planned a hospital to cost \$140,000. They are proposing now to go before the taxpayers for a bond issue, and have so closely calculated that they are enabled to state definitely to the voters that the hospital will cost 3½ cents on every \$100 of taxable property.

If the physicians have gone into the matter thoroughly, and can substantiate their figures, there is no reason why the people should not stand behind them and make their dreams come true. It is rare that the physicians in any community can agree on and put through the business end of a hospital movement of this character. It is the logical way for the problem to be approached, and, if this county medical society can demonstrate its ability to lead the people along true lines in this, the greatest of their public health problems, they will not only have earned a permanent leadership in all health problems for the future, but they will

have done a very great service for the medical profession everywhere, to say nothing of what they will have done for their own people.

Detroit's Advanced Position.

Detroit is proposing to build a new house of correction for petty offenders at a new location out in the country, and the authorities are looking for a suitable farm for the purpose. The city has been making money out of the present arrangement, and last year there was a net profit of \$6,493.53. Since the establishment of the institution, fifty-three years ago, net profits of more than \$975,000 have been made.

But profits to the city have not satisfied the people of Detroit. In 1901 a cooperative plan was adopted by which prisoners might share in the profits, and last year \$14,000 was paid to prisoners as their share. It is proposed now to buy and operate a farm along the same cooperative lines.

No one can tell how much this institution, a survival of the old prison type, has done for those who entered and left its doors, but it is certain that immense good has come out of this method of handling perhaps the most difficult class of unfortunates.

Some day society will take the right attitude toward its "goats," and treat them as the victims of environment and bad breeding; and we may look for the initiative to be taken by such splendid institutions as this Detroit "hospital."

One More Item of Progress.

It is the intention of The Modern Hospital to eventually establish news centers all over the country for the purpose of keeping our readers informed of hospital progress. Something of a beginning of this work is made this month in the gossipy news column from Philadelphia by Dr. William H. Walsh, superintendent of the hospital for contagious diseases.

We shall be deeply grateful, and the readers of this journal will be grateful for volunteers in each community, who will undertake to send each month whatever news may develop. The Modern Hospital can achieve its broadest usefulness to hospital workers only by the help of all, and by the greatest possible interchange of experience.

Will those who feel that they are willing to help as well as be helped, kindly communicate with the editorial offices in Chicago?

A New Iowa Idea.

The State Board of Education of Iowa has promulgated a new rule for the hospital of the State University at Iowa City, the principle of which we shall hear much more about in the near future.

They have prescribed incidentally that only members of the faculty of the school may use the hospital for their private patients, which practically shuts out the local profession; but the board goes further and prescribes that faculty members even may send patients to be treated only in their own specialties—that is, the teacher in surgery may send only surgical cases, the gynecologist may send only gynecological patients, and so on.

In another editorial in this number we have dwelt somewhat on the family doctor of the future, and have made the prediction that in the hospital of the future the family doctor would have no part—that it would be an institution of specialists. That editorial was written before the present news came from Iowa, but the drift of the new "Iowa Idea" rather lends force to the prediction.

Mr. Van der Bent's Papers.

We are publishing in this number the second installment of Mr. Van der Bent's papers on architectural problems in hospital construction and administration. These papers are of the greatest value, coming as they do from one who has been building hospitals and similar institutions for years. Those who have any interest in hospital construction or who conceive that efficiency in administration bears any relationship to hospital architecture, should read the papers carefully and study them. The first installment was published in the February issue.

Our March Cover Design.

Mr. Garden's etching this month is the administration building of the new Louisville City Hospital, a handsome structure, built in every way according to accepted architectural lines, and a monument to the public spirit and enterprise of the Blue Grass City.

To Curb Money-Making Campaigns.

The Federation of Charity and Philanthropy of Cleveland has made common cause with the Chamber of Commerce of that city to prevent the continuance of unauthorized campaigns for money-raising. It is proposed that the federation shall inaugurate a campaign at once to raise \$1,000,000, to be divided among the fifty-five charities which are members. This money, it is proposed, shall be divided according to the actual needs of the subsidiary organizations, and that thereafter no charity or philanthropy will have the support of the charitably disposed without the consent of the Chamber of Commerce.

Ex-President Wm. Howard Taft and Henry B. Tine, the latter a professor at Princeton, are both mentioned as possible successors to Dr. Ira B. Remsen, who resigned some time ago from the board of trustees of the Johns Hopkins University.

EDITORIAL COMMENT.

Tax Commissioner Samuel Lord, of Minneapolis, proposes to tax hospitals that are not doing real charity. He claims that many of the larger hospitals of Minneapolis, started out as charity institutions, have lost the charity character, and are now money-making enterprises. It is said that "it takes all kinds of people to make a world," and it may fairly be supposed that charitably inclined people must have an offset such as this tax commissioner. It is unfortunately too true that many hospitals lose their charity and even benevolent character, and degenerate into very poor business propositions. If a few more tax commissioners will agitate this matter, it will not be long before hospitals will be forced to open their books for the inspection of tax officers, which they decline to do now for the inspection of intending donors. Hypocrisy is a hateful vice, and when it is exercised to exploit the sick poor it is the worst of all human traits. Hospitals that are run for money, and avoid their just business obligations on the plea of their charity work, should be exposed. When the sheep can be separated from the goats, it will be easier to obtain money from the well-to-do and well-disposed for real charity.

Mr. R. J. Newton, secretary of the Texas Conference on Charities and Corrections, has petitioned the federal Government through the Texas delegation in Congress to establish and operate tuberculosis hospitals in a number of places in the Southwest—California, Texas, Arizona, and New Mexico—to care for patients who have left their homes elsewhere for the dry, warm climate, and have become charges on the localities to which they have gone.

There is no doubt that an immense number of helpless people have journeyed to the far Southwest as a last resort; with the ever hopefulness of the tuberculous, they have been sure that, once they were in the sunny Southwest, they would be able to work and get well; but they could not work, and have become charges. This condition must grow rather than cease, and it seems as though it would be a very fine piece of welfare work for the Government to take over this burden from the several states. It is certain the states are not to blame, and should not be made to carry it.

The Government has already a magnificent tuberculosis army hospital in New Mexico, and has proven the usefulness of such an institution. Let us have more such institutions, by all means, when so good a cause is at issue. A few "naval station" experts in Chicago, St. Louis, Minneapolis, and other seaboard cities might be dispensed

with, and perhaps the annual appropriation to dredge Salt river and Wild Horse creek might be suspended to meet the expense.

Duluth is planning for a city hospital. The campaign took concrete form following Dr. Richard O. Beard's paper, read before the Women's Council recently, and published in this issue of THE Mod-ERN HOSPITAL. The News-Tribune of that city is doing all it can to work up enthusiasm for the project. It seems that a special tax levy will be required under the prevailing law, and it is proposed to vote on such a levy at the next election. In the meantime the News-Tribune is arguing that if common humanity and the right of the poor as well as the rich to be properly cared for in illness are not sufficient arguments for a municipal hospital, a little figuring will convince anyone who confines his sentiments to pure finance that it is far cheaper for the community to cure a sick man, and restore him to his place as the family breadwinner, than it is to bury him and then support his family. Sounds like pretty good logic.

Children's Hospital of Philadelphia.

In an open letter to the public the managers of the Children's Hospital of Philadelphia make the following appeal:

To all who have at heart the welfare of little children: The babies and children of Philadelphia need your help. Twenty-four thousand babies under 1 year of age died in Philadelphia during the past five years—one of every eight born. Half of these deaths could have been prevented. Five hundred thousand children under 12 years of age live in Philadelphia. Our hospitals provide for the care of these children less than 800 beds—a totally inadequate number.

Since 1855, when the Children's Hospital of Philadelphia was founded, it has given free treatment to more than 275,000 sick children. It is, however, no longer possible for the hospital to do the work with its present equipment. The managers have, therefore, commenced the erection of new buildings on a new site at the corner of Eighteenth and Bainbridge streets. Through the gift of one generous donor they have been able to purchase the new site at a cost of \$100,000, and with the aid of others to provide for the completion of the babies' dispensary and the out-patient building. Five hundred thousand dollars is still needed for the construction and equipment of the main hospital building and the nurses' home. The managers hope that you may feel willing and able to join them in providing this amount. The hospital is entirely dependent on the generosity of its contributors, and has never asked or received any appropriations from city or state.

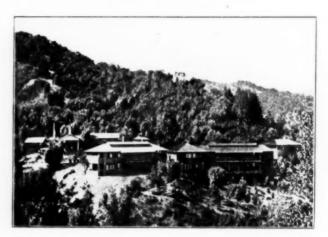
The surgeon-general of the navy, in his annual report, recommends the construction on accepted plans of a hospital ship for each fleet, the assignment of medical officers of the fleet to brief periods of duty on the hospital ship, that marine guards be stationed at all naval hospitals, and that the Naval Hospital, Las Animas, be abandoned.

WOMEN PAY THEIR WAY WHILE UNDER TREATMENT.

Arequipa Sanatorium for Working Women Sets Pace for Other Philanthropic Movements— Is Center for City-Wide White Plague War.

The reeducation of those who, because of illness, have been unable to continue at their trade or former occupation, the teaching of deficients and incurables to do some remunerative work that will make them assets instead of liabilities of society, and that will make them happy and self-supporting, have had the finest effort of some of the most intelligent and philanthropic people of this country and Europe.

One such effort is that initiated by Dr. Philip King Brown, of San Francisco, and a devoted coterie of men and women. It has taken the form



Arequipa Sanatorium for tuberculous wage-earning women.

of a sanatorium for the treatment of early stages of tuberculosis in wage-earning women of California.

Arequipa Sanatorium, shown in the illustration, nestles in the hills at Fairfax, Marin county, about thirty miles from San Francisco. When the movement was inaugurated in 1911, it was with the hope, as expressed by Dr. Brown, that some day it might accomplish four things, namely:

- 1. Provide the best type of institution care to first-stage cases of tuberculosis at \$1 a day, and make this sum pay running expenses.
- 2. Establish some work that the women might do without injury to their health, and with possible financial profit.
- 3. Secure cooperation in the support of early cases at the sanatorium from employers of female labor, and from social and labor organizations.
- 4. Carry on educational work among the 40,000 working girls in San Francisco, among whom the death rate from consumption is twice as high as among men.

To what extent success has crowned the efforts

of this fine coterie of people, Dr. Brown tells most entertainingly:

"We began with a proposal to charge the girls \$1 per day for treatment, medicine, food, and nursing. In a short time we were forced to take some late-stage cases, and we added 50 cents per day to the charge for these bed cases. To give the girls occupation, and, if possible, remuneration for their work, the pottery was established. It has been supported by private individuals, and has not come under the expense of maintenance of the sanatorium in any way. The pottery has far exceeded the hopes of the founders. Our experiment has been an expensive one. The returns have justified it many times over, for the sale of the product of the pottery bids fair to pay back in time all the money invested in it. In the meantime several thousand dollars have been paid to the girls in wages. During the early months the girls were instructed in all of the departments of pottery work without any reference to the making of commercial pottery, the manager in the meantime carrying on an enormous number of experiments with California clays. Early in April (scarcely five months after the pottery started, and long before any sales whatever had been made) the foundation seemed so well laid that the girls were put on a system of pay for piece-work. At present there are at least twelve who are on the pay roll, and many of them earn enough to pay their way very comfortably. As much as \$3 a day has been earned by some of the girls, which is interesting in connection with the fact that the working day does not exceed five hours for the physically ablest of the patients.



Tuberculosis girls at work.

They are not allowed to work on Saturdays or Sundays, and those who work longest have at least two hours rest at noon. It is quite possible for a first-stage case with a favorable outlook to earn enough in the pottery to pay all of her expenses after she has been there three months. Not every girl is sufficiently interested in the work, or has the ability or strength to do this. It has been a matter of record, however, that some of the more serious cases have not begun to improve until they began to do some work."

Dr. Brown tells us that some of the largest commercial houses of San Francisco have helped to develop the work among their own employees, sending to the sanatorium girls whose salaries were being paid for all the time they were idle. The companies have well-ordered welfare departments, he says, so that the girls can be reached in the early stages.

"The educational work in the factory settlements has been carried on vigorously," Dr. Brown writes, not only through the continuance of the visiting nurse of the San Francisco Polyclinic, but



Pottery made by the girls.

through the active cooperation of Mrs. Hannah Nolan, factory inspectress for the Board of Health. By these various means nineteen labor and social organizations of women have started educational work among their members, and five of these have provided sick benefits for patients at Arequipa. The institution received 66 cases during its first year, and nearly twice the number in the second year. There is a medical staff of six men and two women, who give their services free; a woman medical resident, Dr. Hattie Bedortha; a woman medical radiographer, Dr. Anna Davenport; and Miss L. Nora Harnden, superintendent.

Children Will Fight Flies.

The 1914 campaign against Kansas City flies was inaugurated a few days ago when Dr. Hasbrouck DeLamater, assistant health commissioner, appeared before the institute meeting of public school teachers and asked that pupils in all the schools be asked to serve on a quasi-official public welfare committee to notify the health department of breeding foci for flies in various places in the city. It is believed the children will take an interest in this work, and that through their efforts many of the smaller foci can be wiped out.

Youngstown, Ohio, is to have a special hospital to take care of 100 cases of trachoma, mostly in children of workmen in the Youngstown Sheet and Tube Company at East Youngstown. The company is taking the initiative, and will pay the expenses of the institution, which is to consist of a hospital and an out-patient service. A three-story building has been leased and will be completely remodeled for that purpose. There will be special quarters for children, including a school for those of school age.



Albert Allemann, M. D., Foreign Literature.

Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature,
Army Medical Museum and Library, Office of the Surgeon-General
U. S. Army.

A Large Hospital Bequest. Hospital, London, 1914, LV, 382.

In the death, by accident, of J. C. Ansell, aged 17, through his father's will 263,000 francs becomes available for English hospitals and charitable institutions.

Welfare Stations for Infants. Monthly Bulletin of New York State Department of Health, December, 1913.

A detailed account is given of the work accomplished in establishing welfare stations outside of New York City, and the necessity is cited for its development, especially in the rural districts.

Training in Paris. Brit. Jour. Nursing, London, 1914, LII, No. 24.

A training school for nurses has been established by the American Hospital at Neuilly, Paris. It is believed that, after three years' training, women between 18 and 30 years of age will find ready field for practicing private nursing under the medical staff of the hospital.

Anesthesia as Interesting to Nurses. Ann. Surg., December, 1913.

Items of personal interest to nurses are furnished. The anesthesia supplement treats of many phases of anesthesia, the agent used, method employed, reflex action, the anesthetizer, deaths from and the legal aspect of anesthesia. Illustrations complete a most interesting topic.

The Nurse's Qualities. Ellen Harbridge. Nurses' Magazine.

The nurse must cultivate, early in her professional life, habits that will bear good results. If she does not already possess them, she must have the fair plant, Sympathy, which we may call Heartsease; the bright flower, Cheerfulness; and the sweet herb, Forbearance.

Practical Maternity Gown. Brit. Jour. Nursing, January, 1914.

A diagram and description is furnished of the practical invention of Fraulein Kathé Hartmann, of the German Nurses' Association. The garment is especially adapted for the lying-in hospital, and is constructed to serve a two-fold purpose—a nursing gown and a gown for exceptional circumstance.

Conservation—The Waste of Human Energy in Hospitals. Minnie Goodwin. Trained Nurse and Hosp. Rev., New York, 1914, LII, 80-83.

In her second paper the writer suggests the arrangement of a hospital. Two fundamental principles are con-

sidered: the most used rooms and the apparatus to be nearest the place where they are to be used—namely, the patient; that there should be no confusion, but that all paths should be direct. Diagrams are furnished.

Tuberculosis Prevention. Dr. H. M. Biggs. Annual Report to the Society of Tuberculosis Preventorium for Children.

The Doctor announces a subscription fund of \$10,617 to the new open-air school building. The institution's capacity has been increased from 44 to 158 beds. The average stay of patients is three months, and 600 children can be cared for during the year.

Hospital Sunday. Rev. W. Hardy Harwood. Hospital, London, 1913, LIV.

In a special Hospital Sunday number the writer appeals to the charitably inclined public in behalf of the hospital. The current expenses of London hospitals are mentioned and the source of financial support shown. He does not spare the wanton enemies of "Hospital Sunday" and the curse of "misrepresentation."

Who Is the Real Philanthropist? Editorial in the Denver Medical Times, January, 1914.

The writer, when asking, "Who is the real philanthropist?" invites attention to the munificent gifts of our citizens, the endowing of various institutions, the establishing of hospitals, and provision for every essential feature of support, except the men of learning and skill, who do the most vital work of the institutions, and yet they are the only ones who are paid nothing.

Status of the Nurse in the Working World. Lavinia L. Dock. Brit. Jour. Nursing, London, 1914, LII, January 3.

In her paper on the duties and responsibilities of the trained nurse, the writer dwells on the common appeal of an adequate living wage for all workers. The nurse's status in the working world will always be decided by the attitude the nurse takes toward the needs and problems of the working world.

Conditions in China and Japan. Editorial in Survey, New York, 1913, XXXI, No. 16.

In his report, Dr. Eliot recommends the establishment of a hospital at Tientsin for Chinese patients, to be managed by American physicians and surgeons; to have a training school for nurses, out-patient departments, and all the up-to-date accessories of hospital philanthropy. Among the aids to Japan, Dr. Eliot recommends the endowment and establishment of a hospital for foreign residents at Tokyo.

Royal Patron of Nursing. Brit. Jour. Nursing, London, 1914, LII, 24.

The late Queen Sophia of Sweden, whose recent death is recorded, was the royal organizer of trained nursing in Sweden. Her practical interest was of long standing. Her majesty realized the need of a more effective organization of nursing and the necessity of nurses being chosen from the well-educated classes. Her desire was to provide instruction based on Christian principles. Through her benevolence large sanatoriums for consumptives were established.

Hospital Treatment for Tuberculosis.

At a meeting of the Board of Directors of the Association for Prevention of Tuberculosis, held in Washington on January 26 to consider home treatment of tuberculosis, its limitations and dangers, Ex-Surgeon-General Geo. M.

Sternberg, president of the association, read a paper advocating sanatorium or hospital treatment. As it is distinctly a house disease, the danger lies in its propagation from one member of a family to another. A report of Herbert G. Lampson, of the University of Minnesota, was presented in abstract.

Nurses' Statistics (Statistik des Personals in der Gesundheitspflege und dem Krankendienst). G. Streiter. Ztschr. f. Krankenanstalten, Leipsic, 1913, IX, No. 50.

From 1882 to 1895 the number of persons engaged in the health service and the nursing profession in Germany increased from 73,000 to 122,000 persons. Especially marked was the increase of the female attendants. The female nurses increased from 17,661 to 38,937 in 1895 and to 74,000 in 1907. In England there are 23 nurses for every 10,000 inhabitants; in Germany, 14.5; in Prussia, 14; in Australia, 8.25.

Operations in Hospitals. Brit. Jour. Nursing, London, 1914, LII, No. 1347.

At Stroud County Court, recently, a medical practitioner sued a dentist assistant for £17 for an operation on his wife, performed in a local general hospital. Payment was withheld on the ground that hospitals maintained by voluntary subscriptions furnished free treatment. The defendant stated he earned two guineas a week. The County Court decided the defendant must pay the amount claimed, observing that hospitals were founded to give free treatment to the poor, but not to those earning the defendant's wages.

The Norfolk and Norwich Hospital Norwich. Sir Henry Burdett, Series III, Reports on Hospitals of the United Kingdom. Hospital, London, 1914, LV, 369.

Founded in 1771, the rebuilding of the hospital was begun in 1879 and completed five years later. The illustration accompanying the paper shows a spacious, well-planned hospital of a chain of two- and three-story buildings, covering a large acreage of ground, and connected by covered corridors. It has 230 beds, of which 202 are always available, 17 are reserved for emergency cases and 8 for infectious diseases. There is a staff of 44 nurses and probationers. The author claims the voluntary hospitals of Great Britain owe more to the late King Edward VII. than to any of his predecessors on the throne.

The State Hospital for the Insane at Sorau, Lower Lusatia (Die Landesirrenanstant Sorau, N.-L.). Ztschr. f. Krankenanstalten, Leipsic, 1913, IX, No. 51.

The Sorau hospital was originally a castle, built in 1723. It was changed into an insane asylum in 1812 by the Saxon Government. In the course of time the institution was greatly enlarged. A large area of the adjoining land was acquired, and in 1891 the colony system was initiated. A great number of new buildings were erected, among them a fine administration building and a church. The institution is now one of the largest insane hospitals in existence. The building complex around the old castle looks like a small city. The hospital owns about 850 acres of the adjoining land, 800 acres of which are under cultivation.

Observation Wards and Noncontagious Diseases. Lancet Clinic, Cincinnati, 1913, CX, No. 25.

The new Cincinnati General Hospital will have a feature that will doubtless be common in the future municipal and urban hospitals, and is to consist of observation wards connected with the receiving department. Emergency cases are often taken in when a correct diagnosis is essential for early and correct treatment—when, for ex-

ample, discrimination is to be made between alcoholism and hemiplegia or lineal fracture of the skull beneath a scalp wound or in the case of a patient who has been drinking. In justice to the police and for the protection of the patient's reputation, a careful diagnosis in the unconscious or semi-conscious is to be reached. In doubtful cases the patient will be received in the observation wards, and treated by those whose experience and training will enable them to arrive at a correct diagnosis.

Hospitals as Educational Institutions. Thomas Howell. Quart. Fed. State Med. Board, U. S., Easton, Pa., 1914, I. No. 1.

The educational advantages of the American hospital today are unquestioned. Physicians and nurses alike are prompt in complying with recommendations made in various medical colleges in regard to hospital training. An internship is necessary. The public today regard the hospital as collaborator of the medical school in the education of the physician, the intern, and visiting staff, and, indirectly, other physicians and the public. The value of the hospital experience goes without gainsay—physicians do better work. The education is on a higher plane today, when instructors of probationers, lecturers, etc., are paid. As 13 percent of the sick are treated in hospitals, the dissemination of knowledge is greater, and the social service department proves an invaluable adjunct in its instruction to mothers.

Patent Venetian Shelters for Outdoor Treatment of Tuberculosis. Sanitary Record and Municipal Engineering, January 23.

An illustrated description is given of such a device, and the claim is made that it can be cheaply constructed, though well made and durable. The framing is of 2-inch by 2-inch prepared timber, properly jointed and slotted into the floor at the bottom. The floor is to consist of 34-inch boarding securely fixed to strong 21/2-inch bearer joists. The sides and ends are match-lined to a height of 2 feet from the ground with strong %-inch deal-boarded match lining, securely fixed to frame. A door is at one end. The roof is made in four sections, with double top piece for ventilation, and is covered with tarred felt. The openings between the frames are filled in with Venetian blinds with patent rollers at foot, slotted into posts to secure the blinds when down. The price for a single shelter for one bed is £7 15s, and for a double shelter it is £12 12s. G. W. Beattie is the inventor.

Notes on the German Colonial Hospital at Dar-es-Salam (Notes sur l'hopital colonial allemand de Dar-es-Salam). Laurent Moreau, Revue d'hygiène, Paris, 1913, XXXV, No. 10.

The hospital at Dar-es-Salam, capital of German East Africa, is, from a hygienic point of view, a model of its kind. It was built in 1890, and is the prototype of German colonial hospitals. The hospital stands on the seashore and joins the botanical garden. It consists of a central building, or the hospital proper, and two isolated structures containing the kitchens and laboratories.

The central building consists of two stories. The first story contains the administration hall, drug store, waiting room, consultation room, a fine well-ventilated operating room, and rooms for the physicians and nurses. One wing is entirely devoted to malaria. In the second story are the sick rooms. Only Europeans are admitted. Patients paying 7 rupees per day have separate rooms, those paying only 3 rupees are placed in wards. All beds have mosquito nettings, and the open galleries are protected against mosquitoes by wire screens.

Hospital Corps. Report of the Surgeon-General U. S. Army for the fiscal year ended June 30, 1913.

The authorized strength of the corps is shown to be, sergeants, first-class, 362; corporals, 50; privates, firstclass and privates, 2,800, making a total of 3,512 men. The number of sergeants, first-class, is fixed by law; the total strength of the hospital corps, and the number in various other grades is determined by executive order. It has been assumed that when troops of a garrisoned station take the field, the entire hospital corps detachment at the post is available, but such is not the case, as there remains not only the enlisted sick, but families of the officers and enlisted men, sufficient in number to demand that a working hospital be maintained. The surgeongeneral calls attention to the great deficiency in the number of the hospital corps. He considers no action by Congress necessary, since the president is empowered to provide a sufficiently numerous corps, which shall not be counted as part of the strength of the army. He believes that if the secretary of war will recommend to Congress a reorganization of the hospital corps, it will facilitate the recruiting of suitable men for the service.

Hospital Relief for Rural Districts. Chas. Wardell Stiles. Public Health Reports, Washington, 1913.

Through the courtesy of the Atlantic Coast Line and cooperation of Dr. Geo. Thomas, of Wilmington, N. C., Dr. Stiles, of the Public Health Service, is engaged in research work of the rural districts. He is considering the possibilities offered by hospital trains in furnishing the much-needed medical and surgical facilities to those living at a distance from cities and towns. In his paper the author contrasts the opportunities offered the humblest and poorest resident of the city with the limitations of a great mass of suffering, ignorant residents of rural districts who are unable to obtain medical treatment. While the State Board of Health and State Board of Education are awakening to the soil pollution and care of milk, and doing much to relieve the situation, the greatest evil of medieval sanitation still exists. He would suggest as a solution to the problem the free hospital train-a traveling hospital, equipped with medical aid, including the district nurse. The opportunity he considers an excellent one to those inclined to place a welfare endowment, as the great mass of people in question will never receive proper medical or surgical relief unless it is taken to them. They must have instruction along health lines. The hospital relief for rural districts is a suggestion of welfare work in a line not existent at this time.

A Psychiatric Observation and Transfer Station for Children (Eine psychiatrische Beobachtungs- und Uebergangsstation für Kinder). K. Rupprecht. Hygiene, Berlin, 1913, III, No. 4.

The district of Upper Bavaria has established, at an expense of \$250,000, near the city of Munich an institution for defective children. Until the present time it was customary in Bavaria, as well as in other parts of Germany, to send psychically abnormal children without discrimination to any of the existing institutions for the feeble-minded or idiots. But gradually the idea gained ground that this was a wrong procedure, and that all feeble-minded, idiotic, or epileptic children should first be sent to an institution where they could be observed and studied by psychiatric specialists before a final disposition as to the institution to which such children should be sent is made. In such an institution it is possible to separate the children according to their mental capacity, the kind of disease, and method of treatment.

The Children's Home at Munich fulfills all the modern requirements of psychiatry, hygiene, and pedagogics. The building contains two stories. The first story has room for 25 boys, the second story for the same number of girls. Only children under 15 years are received. The nurses are selected with the greatest care, and only such are chosen as have had great experience in handling children. Devotion to the work and kind treatment of the children is the chief requirement. For the psychial and pedagogical observation an experienced teacher is employed.

Venereal Disease—An Australian Experiment. Hospital, London, 1914, LV, 274.

Measures have recently been adopted in Victoria for the control of venereal diseases. The first step was to make syphilis notifiable in the Melbourne metropolitan area, though no penalties enforced it and no names were given. In the course of a year 5,500 notifications were made, three-fifths of which were by private practitioner, the remainder by hospitals. It was calculated that this number was 0.5 percent of the population, a much lower figure than was expected. The Government provided 24 free beds for men at the Alfred Hospital and 20 for women at the Women's Hospital. When it became known that the treatment was in a general ward, and that this class of patients would be dealt with the same as patients in the other wards, the first difficulty in filling the beds gave way to a steady demand. Another means of popularizing the arrangements was the establishment of a night clinic at the Alfred Hospital. The general effect of these experimental arrangements was a greater interest in the subject, with the result of securing early diagnosis and treatment. The practical importance of these results needs no emphasis, but indirectly they have probably paved the way for a bill now before the Victorian Legislature which proposes adequate free treatment, the prohibition of unqualified treatment, and making the transmission of the disease knowingly a penal offense. These proposals will sound less startling when the first prejudice has been removed by a public attempt at experimental measures.

Hospital Construction from the Medical and Hygienic Point of View (Anforderungen an Krankenhausbauten in ärztlicher bezw. hygienischer Beziehung). W. Prauznitz. Hyg. Rundschau, Berlin, 1913, XXIII, No. 17.

In the future there will be an increasing demand for hospital beds, and many more hospitals will be built. To reduce the increasing costs of construction and management as much as possible, it would be desirable to erect, besides the hospitals for acute and grave diseases, institutions for mild and chronic cases, which would not require such great expenses in construction and management as the ordinary hospitals.

The author discusses the question of the corridor and the pavilion system. He thinks that, though the spread of infection is more easily avoided in the pavilion system, it has so many disadvantages that a combination of both systems is preferable. The pavilion system is more expensive on account of the greater difficulties in attending the patients. To reduce expenses, the patients get frequently inferior service. The parking and gardens in the pavilion system are inferior to those of centralized hospitals. For these reasons we find in many hospitals "pavilions" of several stories, with numerous wards and corridors, and which are in reality no pavilions. The corridor system, under an efficient management, has no disadvantages with regard to the patients. To avoid in-

fection, the number of stories containing patients should be limited to two, and the wards should not contain more than 15 or 20 beds. Central hot-water heating is preferable to all other methods of heating. In planning a hospital it is desirable that the physicians should be consulted from the very beginning, and their views and advice given due regard.

The Children's Hospital, Sunderland. Hospital, London, 1914, LV, 293.

This hospital occupies a site four acres in extent, facing south, and well sheltered from prevailing winds. The building is in the form of an E, but with the middle stroke projecting at the back and with two smaller projections on the same side. The ward blocks have their long axes very nearly north and south, and are one story in height. Each ward contains 20 beds. The sanitary offices and bath rooms are placed in projecting wings at the south ends of the wards, and at the entrance is a two-bed ward, ward kitchen, store, cupboards, and lavatory. On the south side of the corridor is a small ward for the isolation of doubtful cases. It would have been a great improvement if the sanitary offices had all been grouped together at the north end of the ward, and the bath room placed next to the large ward, with direct access therefrom. This would have economized the plumbing and hot water services, and have left the south end of the ward free from obstruction.

The operation suite comprises, besides the theater, which has a semi-octagonal end, an anesthetic room, a splint cupboard, and an x-ray room. There is apparently no room for sterilizing, for washing-up, or for the surgeons to prepare for work. A somewhat unusual feature is a recreation hall, which occupies a corresponding position to the operation block on the west side of the central block. The building, as it stands, provides for 50 beds, but it can be extended to accommodate twice that number. Plans of the hospital are given in the article.

Opening of the New Third General Hospital at Hamburg-Barmbeck (Die eröffnung des neuen, dritten altgemeinen Krankenhauses in Hamburg-Barmbeck). Ruppel. Ztschr. f. Krankenanstalten, Leipsic, 1913, IX, No. 49.

The city of Hamburg has now three great general hospitals, the Eppendorf Hospital, the St. George's Hospital, and the Barmbeck Hospital, which was recently opened. These three great hospitals represent the progress in modern hospital construction. The Eppendorf Hospital was built after the war of 1870, and is a fine type of the pavilion system. But the extreme decentralization represented in this hospital had to give way to more modern views. Not decentralization, but a more rational isolation system in the interest of a speedier cure and also from humane considerations, is the modern requirement of hospital hygiene. St. George's Hospital, built in the late 90's, marks a great step toward the realization of this principle. Though constructed in general on the plan of the Eppendorf Hospital, it has avoided the extreme decentralization.

The Barmbeck Hospital is in all respects superior to the two older hospitals, and marks a great progress in hospital construction. The aim was not to build a certain number of more or less similar pavilions for a certain number of patients, but to erect a series of buildings for special diseases and to adopt these buildings to the individual methods of treatment of the various classes of diseases. It is true, the pavilion system has been retained, but these separate structures are to a certain extent independent hospitals in so far as they serve a certain class of diseases, and they have a more or less independent management, as is necessary to carry out efficiently the special therapeutic measures. The Barmbeck Hospital, therefore, does not consist only of pavilions, but the system of the corridor structure and the mixed system of the corridor pavilions is also represented. The hospital comprises in all forty-six buildings, some of which are quite extensive structures. The whole area amounts to 190,560 square meters, 34,000 of which are taken up by the buildings, and thirty-three buildings are exclusively used for the patients. The number of beds is 1,750.

The Helpful Unfit. Boston Med. and Surg. Jour., 1914, CIXX, 140.

Attention is called to the recent movement to encourage partly disabled and convalescent people in hospitals and asylums to support themselves. Supplies worth many thousand dollars were produced the past summer by patients on the hospital farm at the State Colony, Gardner, Mass. A pottery established within the past two years in connection with a hospital on the Pacific coast has enabled tuberculosis girls to pay their expenses while under treatment and to learn a trade. Five patients in an eastern hospital last year made and sold \$6,000 worth of pottery. At the Bedford Sanatorium for Consumptives of the Montefiore Home in New York vegetable gardening is done by the patients sufficient for the needs of the institution. Feeble-minded patients under Dr. Fernald and Dr. Tuttle at the schools and hospitals at Waverley, Mass., under Dr. Luehr at the Haus Schoenen Hospital in Berlin, Germany, and in other places where craft work has been instituted, have made an excellent showing. In this connection should also be mentioned the work done by Dr. Herbert J. Hall, of Marblehead, Mass., in the treatment of patients through systematized work.

The problem is to find and organize the sick and discarded workers, and, by grading work to their ability, restore to them their self-respect and their sense of having a recognized place in society. The work of the physically and even the mentally handicapped may be of finer quality than that of the average so-called well person, and such work is an asset that should not be lost to society.

The Place of a Central Public Laboratory Clinic in Hospital and Private Practice. David Walsh, Hospital, London, 1914, LV, 281.

By a laboratory clinic is meant an institution that combines the work of a clinical laboratory with the actual administration, when necessary, of technical methods of treatment, such as those by vaccines, intravenous medication, etc. The rapid advances of medical science have necessitated the use of many complicated and costly methods of diagnosis. One has only to compare the practice of teh or fifteen years ago with regard to enteric fever, tuberculosis, malaria, and venereal diseases to realize how vital is the help of an expert pathologist in order to form an accurate diagnosis. The increased cost and complexity of modern scientific methods involve serious economic results. The voluntary medical charities, the smaller hospitals unprovided with clinical laboratories, and the panel physicians, working under the insurance laws, are therefore in the position of either furnishing their patients with medical service that is, scientifically speaking, behind the times, or of sending this special work at great cost to a private laboratory.

Walsh suggests, therefore, the establishment of a cen-

tral laboratory and clinic, intended primarily to supply the needs of the metropolis, but capable of wider extension to the provinces later. To this institution all voluntary hospitals, panel and nonpanel doctors, would be entitled to send patients for all kinds of clinical laboratory investigations. In addition, the institute would, at the special request of the medical men concerned, provide and administer vaccines, tuberculin, salvarsan, and other highly specialized and often costly remedial agents. The immediate result of the establishment of a central laboratory of this kind would be to bring under the best modern treatment a large amount of disease that is now being dealt with more or less inefficiently. The funds necessary for its support would be sought from the philanthropic public, the small hospitals which would benefit from the laboratory clinic, and the great distributing hospital agencies, whose burdens would be decreased and their efficiency increased by the clinic. A subsidy from the state would be asked for on the ground that the efficiency of the panel system would be increased, and small fees would be charged patients who were able to pay.

Recent Methods of Isolating Patients with Infectious Diseases, with Special Reference to Experiences in England (Die neueren Methoden der Isolierung ansteckender Kranken, insbesondere nach den Erfahrungen Englands). C. Prausnitz. Deutsche Vierteljahrsschrift f. öffentl. Gesundheitspflege, Braunschweig, 1913, XLV, No. 3.

England was the first country to establish separate hospitals for infectious diseases. Every city and even smaller communities possess now their own isolation hospital. The general hospitals are almost all private institutions, and receive only exceptionally patients with infectious diseases. These isolation hospitals are excellently furnished and managed, and enjoy great confidence among the people. The hospitals for infectious diseases are constructed on the pavilion system. The buildings contain either one or two stories, and are connected by open or covered coridors. As a rule, there are separate pavilions for the various infectious diseases. There is no difficulty in isolating scarlatina, diphtheria, and typhoid fever, but the system presents difficulties in other ways. Many patients are received with an erroneous diagnosis of an infectious disease. In 1911 the number of such patients amounted in the London hospitals to 10.6 percent of the whole number. Many cases are also received with a mixed infection. These conditions have led to widespread secondary infections. Of late years much attention has been paid to the solution of this difficult question. Three systems have been evolved by the initiative of the English hospital physicians—the box system, the barrier system, and the bed isolation system.

In the box system a number of single rooms separated by a corridor are established. The boxes are completely shut off from the corridor. Between the boxes there is a partition about 5½ feet high. The space above the boxes serves for aeration, but this space takes place only through small holes in the upper window panes. The air in the lower part of the box is expected to be renewed through osmosis from the space above. The author thinks that this system may be efficient in some hospitals and under certain conditions, but that it will not suit in all hospitals, because nursing is too complicated under such conditions and the expenses are too great.

In the barrier and bed isolation systems no attention is paid to the possibility of transmission of infection through the air, but contact infection is combatted in a most efficient manner. The barrier system was perfected by Biernatski, the meritorious director of Plaistow Hospital. He assigned the patients, as much as possible, according to their disease to the various pavilions. Then, if a complication occurred at any station—for instance, a septic scarlatina case at the scarlatina pavilion, or an intercurrent disease as diphtheria, measles, whoopingcough, etc.—a red cord, the symbolic barrier, was placed at the foot end of the bed, which signified to the nurses, that the patient behind the barrier is to be kept strictly isolated from the other patients. While all other patients may freely walk about, such a patient cannot leave his bed, and the nurses attending him have to observe special precautions. This simple system has proved a great success, and cases of transmission of infection are almost unknown.

Rundle and Burton, in Liverpool, went a step further and introduced the bed isolation system. While in the barrier system usually only one or two patients have to be isolated in a ward, Rundle and Burton intentionally turn one ward into a mixed station of all kinds of complicated and uncomplicated, infectious, and noninfectious cases. The construction of the pavilions of the Liverpool hospital is extremely well adapted to this system, and the highly educated nursing material is another advantage. So successful has been this system that during the last two years only two cases of infection—two scarlatina cases—have occurred.

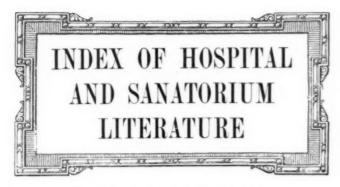
The experiences in England seem to prove that patients affected with various infectious diseases may be treated in the same ward with almost as great safety as in the box system if the hygienic and disinfecting measures are thoroughly carried out. The strict isolation which many writers demand is not at all necessary. The greater expenses caused by special isolation pavilions and the employment of special nurses are thus avoided if this new English system proves successful on a large scale. It is true, in Germany the hospital nurses are not equally well trained as those of England, but an improvement in this respect is noticeable from year to year, and the various disinfection schools in Prussia turn out an increasing number of nurses specially trained for nursing infectious diseases.

\$2,000,000-WHO WANTS IT?

A College Refused It, and the People Oppose Its Use for New Hospital.

There is a fund of \$2,000,000 in Philadelphia that no one seems to want. The fund was left as a bequest by the late Miss Anna T. Jeanes to Swarthmore College, provided the college would cut out all athletics. This the college trustees declined to do, and refused the gift. Now it is proposed by the trustees of the estate to build a hospital for the Society of Friends, or Quakers, to which sect Miss Jeanes belonged.

The newspapers of Philadelphia, notably the Record, are opposing the hospital on the ground that the city is in far greater need of funds to support the hospitals already in existence than of another hospital, which will merely add to the number of those too meagerly supported. The Record finds that a scandal already pervades the state due to the struggle of the hospitals for state aid and the scrambling competition of those institutions that must get money from one source or another to merely keep up their existence. It thinks that Miss Jeanes' \$2,000,000 could be much better used to help some of the present deserving institutions.



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New Emergency Hospital.

A campaign to raise \$300,000 for a hospital at the national capital was commenced some months ago, and one-half the amount is an accomplished fact. The board of directors of the Emergency Hospital will reopen the fight for the balance. The proposed new building will occupy a site on New York avenue between Seventeenth and Eighteenth streets, N. W., and will be an acquisition to the Washington skyscrapers. It will be nine stories, occupying exclusive grounds on New York avenue. There will be an abundance of air and sunlight. Desirable features will be the nurses' home, an expensive x-ray apparatus, and other appliances used in surgical work.

The New Surgeon-General.

The president's selection of Colonel Wm. C. Gorgas to be surgeon-general of the army, to succeed the late Brigadier-General Torney, has met with favorable report from the Congress, and brings to that office a sanitary officer of international reputation. With Major Robert E. Noble, Colonel Gorgas is now at Johannesburg, South Africa, making a study of needed sanitary improvements in the diamond fields, having been granted, at the instance of the British Government, four months' leave of absence for the purpose. Until recently Colonel Gorgas has been in charge of sanitary work in the Panama Canal Zone. He will succeed to the rank of brigadier-general, and assume his new duties on his early return from Panama.

A wealthy citizen of Denver is to build and endow a home for the aged poor as a memorial of his recovery from a dangerous illness.



LETTER FROM PARIS.

Method of Examination for Place on Paris Hospital Staff
—Individualism Prevails—Relationship Between

Doctor and Patient.

(Continued from February issue.)

Paris, February 10, 1914.

In my last letter I mentioned the relation of the University of Paris to the hospitals, and stated that certain services in certain of the hospitals were given to the university. Moreover, teaching may be done independently; that is, an agrégé (practically corresponding to an assistant professor) may obtain by examination a nonuniversity hospital position. If he does, there is no objection to his doing clinical teaching in his wards. Or a man in no way connected with the university may give in-



Fig. 1. Charité Hospital.

struction if he can find students who wish to follow him. The Assistance Publique throws the hospitals open to teaching if the men who win places on the staff choose to teach.

Every man on the staff of a Paris hospital from chief to extern has to win his place by competitive examination. The personnel includes physicians, surgeons, obstetricians, ophthalmologists, oto-rhino-laryngologists, chiefs of laboratories, and interns and externs.

Unfortunately, the chief of service cannot build up his staff as is done in Germany. All these men are selected by the *concours* given by the Assistance. The rules governing the concours are interesting. I quote at random from the copy of the code I have before me:

Externat. The applicant must have finished four inscriptions in the medical school of the state, and must furnish certificates to the effect (a) that he has been born, (b) that he has been recently vaccinated, and (c) that he has lived a respectable life and has no bad habits. This latter must be certified to by the mayor of the commune in which he resides. Provided he has not committed mur-

der, arson, theft, or been convicted of high treason, such a certificate is obtained without difficulty. For his practical examination the applicant is asked a question in descriptive anatomy. He has five minutes to think over this question and then five minutes in which to answer it. He next is asked a question in either pathology or minor surgery under the same conditions. Following are a few of the questions recently asked: Describe the median nerve; give the technic of phlebotomy; describe the portal vein; give indications and technic of stomach lavage; technic of an autopsy.

The interns are chosen only from those who have won externships. Eight years must have elapsed from the time they matriculated in medicine before they are eligible for this examination. They must show certificates of their qualities as externs and of their scholarship in the medical school. This examination includes a written test on a subject in anatomy or pathology, for which two hours are allowed, and also an oral test, for which ten minutes are allowed for reflection and ten minutes for answer of the question. "Signs and diagnosis of tetanus" was one of the questions asked recently in the written quiz.

The selections of laboratory chiefs, physicians, surgeons, and specialists are conducted in much the same



Fig. 2. Salpetrière Hospital.

manner, only with greater elaboration. The applicant for position of physician must submit to a written test on a clinical and a pathological subject, a clinical examination of an actual case, and a theoretical oral examination. The men not eliminated by these tests are then given a consultation (diagnosis, prognosis, and treatment) on an actual case. Then all but three men are eliminated for each place, and a final examination given, on which the candidate is allowed twenty minutes to examine his patient and fifteen minutes to tell the jury about it.

It is needless to say that there is great objection to this method of choosing men for these hospitals. The only thing that can be said in its favor is that it might be worse. Little can be added to the critical discussion given of this subject by Abraham Flexner. This author, by the way, sizes up the clinical situation in France as follows: "Analytic study has worked out the basis on which applied medicine rests. While bedside observation has lost nothing of value, new tools have been forged, new technic devised, by which order, intelligence, increased certainty, and something more nearly approaching completeness have been rendered attainable. Of this movement, French clinical training takes no adequate account."

Whatever general objection we may assume in the

¹Medical Education in Europe. A report to the Carnegie Foundation for the advancement of teaching.

great depths of our knowledge to this system of which Paris makes use for manning its hospitals, we are forced to admit that it has not killed individualism. As a visitor to many of these institutions, I have been struck with the capacity and energy of these men, many of whom, as in the German hospitals, are men of international fame. I have never seen anywhere, in Germany or



Fig. 3. Lariboisière Hospital.

England or in America, such careful attention given to patients by the chiefs of staff as is done here in Paris. I have never seen more careful and exhaustive physical examinations made anywhere. I have never seen more intense personal interest exhibited in the handling of the sick than in these public hospitals.

Another thing. I have never seen here in Paris what is so common in Germany, and that is the lack of human relationship between doctor and patient. In Germany a patient is a "case"—a disease entity, not a human entity. In Paris the patient is a human being, with a soul as well as a body. The human side of medicine is constantly cropping up even in these hospitals for the unfortunate poor. To illustrate my point, let me recount a little incident that I saw at the Pitié one day. I had been attending Dr. Babinski's clinics for a time, and he had been working on a little girl, about 9 or 10 years of age, who had lost her ability to walk. And here I might say again, if she had been the daughter of the president of the French Republic, he couldn't have worked harder on the case. Finally he succeeded in getting her on her feet,



Fig. 4. Laénnec Hospital.

taking a few steps at first, and gradually regaining her full power of locomotion. And so the day came for his big clinic. There were several hundred students there and he talked about the case, and finally turned to his assistant and said, "Please send in the patient."

Then across the floor of the amphitheater, marching like a soldier, and all dressed up in her best white frock, came the little girl. In her hand was a great bouquet of flowers, and straight up to Babinski she marched, and with a blush and neat little bow placed the flowers in the doctor's hand. Babinski blushed like a schoolgirl, and leaned over and pinched her gently on the cheek and said something that I couldn't catch. But the students just filled the place with applause for a moment, after which everybody pulled themselves together and the highly scientific medical lecture went on.

R. L. THOMPSON, M. D., Professor of Pathology St. Louis University School of

Medicine.

LETTER FROM THE ORIENT.1

Filipino Girls as Nurses—Japanese Nurses—Why Japan Hospitals Feed Meat—Hawaii Has Hospital for Every Hacienda—Per Capita Hospital Costs in China.

Manila, December 19, 1913.

I have booked to sail for home via the Orient and Europe on February 20, 1914. My itinerary, as mapped out to date, permits me to visit awhile in China, down through the Straits Settlement, India, one or two cities in Arabia, and a short trip through Egypt, landing at Trieste sometime the latter part of April. It is my intention to spend considerable time in the German hospitals, and I will no doubt visit other similar institutions in Europe.

I note what you say regarding the Japanese nurse, and frankly am compelled to differ with you on this point. In the first place, let me ask, from what walk of life is the nursing material selected? Surely not from the highly educated. Do the young Japanese women of social standing take up nursing as a profession? I think you will find that they do not. Both of the above questions as regards the Filipino nurse may be answered in the affirmative, which, first of all, would insure at least more

¹THE MODERN HOSPITAL wrote to Dr. Woodbury last fall and arranged for a series of letters covering his itinerary from Manila to Washington. This is the first of these letters.

promising material than is available in Japan. If my memory serves me correctly, the Japanese institutions, until very recently, followed the old German idea, and, with all due respect to the training schools of both Germany and Japan, I am inclined to think that it is not so very long ago that the so-called nurses of the above mentioned countries would be better compared with our "nurse maids" of the states rather than with the highly trained product of our training schools of today. The course of instruction offered by the Philippine Training School for Nurses is probably not excelled by any training school in the world, and I do not call to mind any school in the United States provided with better facilities for teaching than are found here. When you realize that the course in this school covers a period of three and a half years, with a six months' post-graduate course; that all lectures and laboratory work are given by high-salaried professors of the University of the Philippines in the magnificently equipped laboratories of that institution; that the preliminary education of all candidates must be the equivalent of a high school course, and that many of our pupils are normal school graduates, you will probably agree with me that the graduate Filipino nurse ranks next to the American, and is, without doubt, superior to the Japanese.

In answer to your query as to the reason for the meat diet in Japanese hospitals, permit me to state that the custom has prevailed for a considerable length of time, even though the necessity for it has been only recently known. You will recall that most of the persons admitted to hospitals in the Orient, and especially in Japan, were either suffering directly from beriberi, or at least that disease was a complication of possibly some other ailment. The Japanese physicians found that by feeding a meat diet the patient seemed to make a rapid recovery, or at least was greatly benefited, and consequently the habit was formed. It is only very recently that they have known the reason why the meat diet was essential, and, now that they are enlightened, I should not be sur-



Part of the graduating class, 1912, Philippine Training School for Nurses, Philippine General Hospital.

prised if some other less expensive article were substituted-for instance, the extract of rice polishings, "tique tique," would undoubtedly serve their purpose. I do not mean to infer that meat is a specific for beriberi; it simply furnishes a proteid element which is lacking in polished rice, and, of course if meat forms the main portion of a diet, rice is naturally eliminated from the bill of fare. It is practically admitted now, at least by the local authorities, that the consumption of "polished" rice is responsible for the above mentioned disease. I have seen this fact demonstrated on more than one occasion, and the health authorities are at present attempting to create legislation which will put a high tax on the polished article, thus compelling the poorer classes, who, by reason of poverty, confine their diet almost wholly to rice, to use the unpolished product. All Government institutions are compelled by law to use the unpolished rice.

Referring to your comment regarding the hospitals of China, I consider it quite apt, and in keeping with my personal information as to the hospitals of that country. Only recently I was called upon to furnish some of the plans for a hospital for the Harvard Medical School of China, located at Canton, and in this way I became more or less familiar with the class of organizations which you mention. I happen to know that the per capita cost per day is somewhat in excess of the figure you mention (15 cents per day per patient), but I think you will find that the physicians, many of them missionaries, draw their salaries from one fund, while the upkeep cost of the hospital is contributed from another, although the entire amount is undoubtedly provided by certain religious organizations in the states. I shall carefully follow out your suggestions during my stay in China, and will be glad to furnish the facts as I find them.

I made only a brief stop at the Hawaiian Islands, but have since had occasion to look into the hospital conditions in that field. I can see no reason for a large hospital located at any one spot in the islands, unless of course someone wished to erect a "monument" of some sort. Every "hacienda" or plantation, no matter how small, has its own hospital; frequently two or more of them combine, but in either event the plan takes care of the large working class-not only the workers themselves, but the members of their families. A small hospital in Hononlulu might be a good thing, but I can see no reason for any large, pretentious affair.

At present I am gathering data and photographs with which I hope to work up an aritcle on social service work in this part of the world and in the countries through which I shall pass. Our so-called social service here at present confines its energies to obstetrical work. Very recently, however, the Government appointed a committee to investigate infant mortality, and, to properly carry out this work, it was necessary to go rather deeply into the social conditions and home life of the people. This report will not be ready for publication for some time, but, from my personal knowledge of some of the findings, I believe that it will create a sensation in the minds of any interested hospital workers. I assure you of one of the first copies from the press, and think you will find it without doubt, one of the most complete works ever written on the subject.

WILEY E. WOODBURY,

Superintendent of the Philippine General Hospital.

Dr. W. R. Newton has recently opened a \$40,000 hospital at Cameron, Texas.

LETTERS TO THE EDITOR

Blunders of a Board.

To the Editor of THE MODERN HOSPITAL:

I am inclosing the following letter sent out to architects, and which seems to be self-explanatory:

"To Architects: Gentlemen—In regard to the general requirements for the proposed Old People's Home, to be located near Decorah.

"1st. Competitive drawings to be in hands of the committee by noon of January 30, 1914.
"2nd. The location of building will be about three and

a half miles southwest of Decorah, near the Milwaukee railway, and will be located on a wooded rise of ground, facing east. In the foreground will be a valley covered with burr oaks and elms.

"3rd. The building to be of brick and stone, and to accommodate 50 wards and the necessary help.

"4th. The designs submitted must be in expense of not to exceed \$25,000. The committee have in view that the foundation be made of local limestone.
"H. C. HJERLEID, Decorah, Ia."

I hardly need analyze this for you from an architect's standpoint. First of all, no architect who is competent to make drawings for a hospital would submit plans to an unknown committee, which is probably not qualified under any circumstance whatever to judge of plans for a hospital.

Secondly, architects who are doing this class of work, and are thoroughly conversant with it, have no time to go into competitions, especially under the conditions as laid down in the fourth of these requirements, to say nothing of the second and third. I think it rather puerile to expect an architect to design a hospital and give as the requirements, as given in the second condition, that the location of the building is to be about three and a half miles from a city, near a railway, on a wooded rise of ground facing east, and to go so far as to make it a part of the requirements of an up-to-date and modern hospital in every respect that the valley in front of the hospital will be covered with burr oaks and elms.

If it were not so sad, it would be quite laughable, but I can see no joke whatever in a thing of this sort. third requirement embodies the entire needs for the hospital-that it is to be of brick and stone, and to accommodate 50 wards and the necessary help. I take it for granted that the gentleman who wrote the program knew what they wanted for the exterior of their building, but what they mean by 50 wards and the housing of the necessary help is beyond my comprehension. And, to make the matter worse, the fourth of the conditions herewith given is that the entire hospital, inclusive of 50 such wards, which might mean 50 beds or 50 private rooms, and the housing of the necessary help, which would probably mean 10 more rooms at the least-must be bought for not to exceed \$25,000.

Even if the hospital were built of brick and stone on the exterior, and the interior made of ordinary construction, it is doubtful in my mind whether even the exterior alone of this building, with the cheapest sort of interior construction, could be done for the amount they wish to expend. I should say, as a matter of judgment, that at the very lowest cost, with the strictest economy, such a hospital could not be put up under any circumstances whatever under \$75,000, and it would probably be nearer \$100,000, and this despite the fact that the committee has in view that the foundation is to be made of local limestone.

Cannot our magazine do something to discourage this sort of procedure? Either it is a lack of ordinary business ability, complete ignorance, or a cocksureness on the part of such committees that would amount alone to an assuming omnipotence. It is frightfully discouraging to even have the idea presented as it is here, taking, as it does, the viewpoint that a hospital or home is a building that can be built for immeasurably less than the cost of even a factory building.

The probable difficulty—or, rather, the cause of such procedures as this—has been the fact that the country architect, and sometimes the city architect—more is the pity—has willfully misled boards, or in his woeful ignorance has made statements to them, which give them the idea that a hospital is a building in which all you have to have is a place to stick the patients, whereas as a matter of fact that is the least expensive of the entire hospital structure.

In a hospital of this size the amount of money that these people wish to expend is not even sufficient to take care of the working and administrative departments, inclusive of the operating rooms, toilets, heating plant, and like departments, much less the putting up of an entire building for the purpose.

MEYER J. STURM.

COOKED MILK CONTROVERSY IN ENGLAND.

Pasteurized, Desiccated, and Sterilized Infant Food on Defensive—American Methods Cited in London Lancet.

Great Britain is in the midst of a most active controversy on the subject of pasteurized and boiled milk in child feeding. Dr. Ralph Vincent, in the London Lancet, claims to have demonstrated that cooked or pasteurized milk (it made no difference which) was responsible, not only for many of the well known gastrointestinal infections of childhood and infancy, but for many "mysterious diseases" not otherwise explainable.

Dr. Eric Pritchard, of London, replies to Vincent through the same medium on January 24, taking the pasteurized milk side of the controversy. He cites a number of infant commissions and schools for mothers to show that infant mortality has materially dropped since desiccated and cooked milk were substituted for raw milk. He also cites a paragraph from Prof. Porcher's recent book, "Le Lait Desseche," as follows:

"At a certain infant clinic in Belgium the infant mortality rate was 260 per 1,000 in 1901. In 1903 sterilized milk was introduced, and the rate fell to 150. In 1907 trained health visitors were employed, and the rate further fell to 60 per 1,000. In 1908 dried milk was substituted for sterilized milk, and the rate fell to 34 per 1,000."

Our own tendencies in this country regarding raw versus "cooked" milk are given prominence in Dr. Pritchard's defense of the newer methods. He says:

"In America, the home of certified milk, not only are the original and most fervent pioneers of this movement now converted to pasteurization, but they are among the most active agitators for the pasteurization even of certified milk of the highest grade."

Dr. I. B. Muirhead has joined forces with Vincent against pasteurized or cooked milk, and the controversy wages merrily in the "Letters to the Editor" columns of the *Lancet*.

By recent orders from the secretary of war, Fort Mc-Henry will be converted into a hospital for immigrants who need treatment on their arrival. The immigration service will be permitted to furnish the necessary equipment. The secretary's decision will be a great improvement in the present hospital facilities of the immigration station at Baltimore.



Martel Electrically Driven Bone Surgery Engine.

During the past few years bone surgery has commanded a great deal of attention on account of the work which many of our surgeons have done in connection with transplants, skull trephining, etc. As a result, several new types of apparatus and a great many instruments have been devised to meet these new requirements, such as forceps, burs, drills, saws, etc., which are mechanically driven, and still others in the form of burs and drills operated with a hand brace. There has, however, always



Fig. 1. Electrically driven bone surgery engine.

been the desire on the part of surgeons for something in the way of apparatus which would cut cleanly and quickly. This is particularly true in cranial operations, where the saving of time is an important factor, as considerable shock is produced by the use of any instrument which is operated slowly, such as the cranial forceps, chisels, gouges, etc.

Several types of electrically driven engines have been made, but in most of them certain fundamental defects existed which prevented them from becoming very popular. First of all, a bur, drill, or saw, when electrically driven, should be under the perfect control of the operator at all times, because, should the cutting instrument become caught, or should too much pressure be used in removing a cranial flap, the result might prove disastrous.

Dr. Th. de Martel, of Paris, has designed a very suc-

ing" of the trephine when first started. This spike has a back gear attachment so arranged that as the trephine makes its entrance into the skull the reverse thread of the back gear takes up just sufficient space to leave the same pressure on the spike, regardless of the distance the trephine has entered the bone. The instant that the



Fig. 2. Parts of the trephining apparatus.

cessful electrically driven engine which has certain features entirely new in the matter of safety. The engine was first constructed with the idea of using it entirely for cranial work, but additions to the equipment have been made, so that it is now adaptable to all bone surgery. An electric motor of one-quarter horse-power drives a flexible shaft, the shaft being much heavier than the type heretofore used for similar apparatus. This flexible shaft drives a geared handpiece, the various attachments being used with the handpiece. A foot switch is supplied for controlling the motor. The unique feature is the automatic stop which operates the trephine in making a cranial flap.

Fig. 1 shows the electrically driven bone surgery en-



gine, and Fig. 2 shows quite clearly the construction of the trephining apparatus. The shank of the trephine A (Fig. 2) passes into the handpiece. The guard B (Fig. 2) is then attached to the handpiece, making the assembled instrument as shown in Fig. 3. Attached to the guard is a threaded spike, the purpose of which is to prevent "creep-



Fig. 4. Initial opening being made.

trephine has punctured the skull, the entire arrangement automatically stops by means of a toothed clutch, which is forced apart by a coiled spring inside of the barrel C (Fig. 2); thus, by separating the revolving part of the instrument C and the now stationary part D a distance of approximately ½ mm., the engine is stopped, regardless of the amount of pressure the operator may exert upon the handpiece.

Some idea as to the rapidity with which a cranial bone flap can be made may be had when it is stated that Dr. C. C. Rogers, of the Francis Willard Hospital, Chicago, has on a number of occasions demonstrated before his clinic that a bone flap three and four inches in diameter



Fig. 5. Spiral estcotome attached to handpiece.

can be deflected, exposing the dura, in approximately three minutes from the time the scalp incision was started, while the initial trephining, should this be all that is necessary, can be made in ten seconds, with assurance that the instrument will stop just as soon as the bone has been punctured. As a further test of the accuracy with

which this is accomplished, an empty skull was used in a demonstration during the recent Clinical Congress of Surgeons held in Chicago. This skull was repeatedly packed with thin tissue paper, numerous trephinings were done, but not even once was the tissue paper marked or torn.



Fig. 6. Flap being cut.

The initial opening being made (Fig. 4), the automatic drill is removed from the handpiece, and one of the spiral osteotomes with its guard is attached (Fig. 5). The engine is now started, the osteotome and guard inserted through the opening which has been made, and a flap can be cut of whatever shape desired, the handpiece, being swiveled, permitting free movement in any direction (Fig. 6).

It will, therefore, be seen that the equipment is apparently all that could be desired in the way of a mechanically driven apparatus, inasmuch as it offers a quick means, which is at the same time safe, for opening the skull. It does not produce the shock that is unavoidable with many other types of instruments, and the possibility of injury to the dura is practically avoided. The equip-



Fig. 7, spiral osteotome; Fig. 8, round osteotome guard; Fig. 9, oblong osteotome guard; Fig. 10, circular saw.

ment is now made so that a number of other attachments may be used, some of which are illustrated (Figs. 7 to 14). The circular saw can be used for making bone transplants, amputations, etc., the spiral drills for bone plate work, the small round burs for mastoid operating,

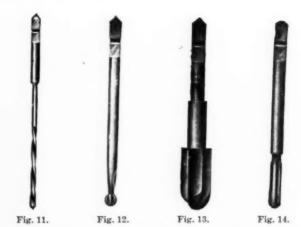
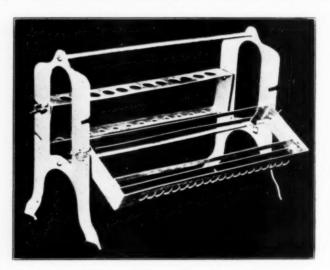


Fig. 11, drill; Fig. 12, mastoid bur; Fig. 13, oblong bur; Fig. 14, oblong bur.

and the elongated bur for taking away necrosed bone. All operating parts are made so that they can be sterilized by boiling, the flexible shaft covering being constructed of a metal tube.

New Apparatus for Abderhalden Serodiagnosis and Other Tests.

This apparatus, which is made on original lines, is the invention of Dr. Therese O. Pohl, technician in the department of obstetrics and gynecology of Washington University Medical School, St. Louis. It was primarily intended for Abderhalden serodiagnosis, but tests have shown that it will meet all laboratory demands. The main points in its favor are adaptability, convenience, cleanliness, durability, and the absence of bulk and weight. Its difference, compared with the wooden racks now in use, is in its simple construction, adjustability, and material used. The



Apparatus for Abderhalden serodiagnosis and other tests.

stand, as shown in the illustration, is made of cast aluminum, has slots cut in both ends in which to hang test-tube racks of different sizes and for such purposes as Abderhalden serodiagnosis, Wassermann tests, urine analysis, culture media, etc. These racks can be slanted at any angle, and the degree is attained by means of bat-wing screws that can be loosened or tightened at will. Its height from the table, which is also adjustable, enables the use of a bunsen (micro) burner, which can be moved from one tube to the next, when it is used for boiling.

The material of which it is made will stand intense

heat, and does not corrode with acids. The possibilities of this apparatus are unlimited. The apparatus is in use in the obstetrical and gynecological laboratory of Washington University Hospital, and has given the utmost satisfaction.

Thoma-Metz Hemacytometer.

That there is something wrong with the hemacytometric methods usually employed is self-evident by the number of rulings and methods for blood corpuscle counting devised in the last few years. While the ingenious arrangement of some of the appliances is wonderful, and the accuracy of others is indeed remarkable, we feel safe in stating that, when it comes to a combination of greatest accuracy and simplicity in the modus operandi of blood corpuscle counting, a decided want was felt until recently. Unquestionably diluting the blood is the only logical way of approaching the problem, and it has been followed by all modifiers of the Thoma principle. The method employed to count the corpuscles present in the dilution has undergone a great many changes-from adding auxiliary lines to the ruling devised by Thoma (Turck, Zappert-Ewing, Neubauer, etc.) to changing the ruling completely (Simon, Bürker, etc.). The inherent faults of the methods have, however, been overlooked continually. Bürker has touched upon them, but his method, while very good, is still too complicated for the practicing clinician.

In the method devised by Mr. C. Metz it is claimed a solution of the problem has been found. The striking de-



Fig. 1. Thoma-Metz hemacytometer.

parture from the Thoma method is that no ruling in the counting chamber is utilized. This in itself is a tremendous advantage. The most accurate ruling is sometimes difficult to see, and, if it is broad and deep enough to be seen clearly, the individual lines are actually deep grooves-ditches, in fact-when compared with the dimensions of blood corpuscles; and, when such ruling is present in the counting chamber, an even distribution of the blood corpuscles is impossible. One will always find a greater number of blood corpuscles in the center square than in the ones surrounding it. Of course, the error will be more or less constant for each individual blood counting chamber, but it will vary from chamber to chamber, even if the same pipettes and the same diluting methods are employed, and the reason for this is the variation in the depth of the ruling. To avoid these troubles in the Thoma-Metz hemacytometer, the ruling is shifted from the counting chamber to the focal plane of the eyepiece. Furthermore, the ratio between the ruling, the cubic millimeter, and the magnification of the microscope have been

considered, and the new units devised are based on this ratio. Not only that, but the counting units have been so fixed as to represent an exact submultiple of the cubic millimeter.

A counting chamber of the customary depth and dimensions is used, but there is no ruling on the platform upon which the diluted blood is placed. Pipettes of the customary form and graduations are employed. When red corpuscles are to be counted, a dilution of 1 part blood in 100 parts diluting fluid is needed. For white corpuscles, a dilution of 1 part blood in 10 parts fluid is required. So far nothing unusual has been done. The ruling, which is placed in the plane of the diaphragm of an eyepiece, is the



Fig. 2. Markings on the eyepiece.

only unfamiliar addition. The lateral dimension of the larger square in the center of the ruling is such that, taking into consideration the magnification of the No. 6 objective (4 mm.) and the eyepiece, it represents a linear object of 0.1 mm. on the stage of the microscope. The square in the eyepiece, therefore, stands for 0.01 mm. square. Owing to the fact that the counting chamber is 0.1 mm. deep, the square in the eyepiece represents the contents of 0.001 cmm. The dilution being 1:100, it is self-evident that the number of red blood corpuscles in a cmm. of blood, will be equal to the number of blood corpuscles counted in the large square multiplied by 1,000 x 100. In other words, five ciphers are to be appended to the number of blood corpuscles counted in the square.

It is in the circle of the ruling that the white blood corpuscles are counted. The area of this circle in the Metz ruling is exactly ten times that of the central square mentioned before. It represents, therefore, an actual surface of 0.1 square mm. on the stage of the microscope. The depth of the counting chamber being 0.1 mm., the capacity of the volume represented by the circle is 0.01 cmm. Therefore the white blood corpuscles contained in a cmm. of blood are equal to the number found in the circle multiplied by 100 x 10. In other words, all that is necessary is to append 000 (three ciphers) to the number of corpuscles found in the counting circle.

It is advisable that several fields should be counted by moving the slide on the stage, taking as a factor the average number of corpuscles found.

The Surgeon's Responsibility Independent of the Nurses.

The Supreme Court of Pennsylvania has reversed the judgment rendered for the defendant, ordering a new trial, in the case of Davis vs. Kerr. The defendant, preparatory to closing the wound, inquired of the nurses if their count tallied and if all the sponges had been removed. On their affirming it, he closed the wound, overlooking a piece of gauze about 12 inches long. The Court does not consider the defense sufficient in showing that he relied on the count of sponges made by a nurse.

Brooklyn's only orthopedic institution, the House of St. Giles the Cripple, recently collected \$105,332. The campaign started to raise \$100,000 for a new building, and subscriptions made after its close will make a total of nearly \$110,000.



Mary M. Riddle, R. N., Editor, Superintendent Newton Hospital, Newton Lower Falls, Newton, Mass.

Nursing in Infancy and Childhood-Development and Care of the Normal Baby in Its First Year.

BY HENRY F. KEEVER, M. D.

ant in Pediatrics Harvard Medical School; Junior Assistant Physician Children's Hospital, Boston; Assistant Physician Newton Hospital, Newton, Mass.

In order to care for sick babies intelligently, it is necessary for the nurse to know something about the development of the normal child. At birth the average boy weighs 7½ pounds; the average girl, 7 pounds. At the end of the first year the boy will weigh 201/2 pounds and the girl 19% pounds. At birth the average boy is 20.6 inches long; the average girl, 20.5 inches. At the end of the first year the boy is 29 inches; the average girl, 27.7 inches long.

FUNCTIONS.

THE VOICE.—During the first year the infant uses its voice merely to express discomforts and desires. At about twelve months it begins to enunciate single words, and in the middle or toward the end of the second year learns to form short sentences. As the voice is almost the sole means of expressing itself, a baby cries for many reasons. It cries:

- 1. For exercise-crying is the common method of expanding its lungs.
 - 2. Because it is hungry.
- 3. Because it is thirsty-babies need water, and often water will satisfy them when an unthinking person would
 - 4. Because it is wet or cold.
 - 5. Because it is sick.

6. To express discomfort from any source, whether from too tight clothes, pins, etc.

MENTAL EXPRESSIONS.—A baby seldom smiles before the fifth or sixth week. It does not recognize objects before the sixth to eighth week. Touch, taste, and smell apparently are more or less developed at birth.

LACHRYMAL GLANDS .- Babies usually shed tears when three or four months old. Tears are suppressed when an infant is profoundly affected by disease, and a return of tears is an indication for a favorable prognosis.

TEETH. - There are twenty teeth in the first set and thirty-two in the second. The teeth of the first set appear in the following order:

- 6 to 8 months, 2 middle lower incisors.
- 8 to 10 months, 4 upper incisors. 12 to 14 months, 2 lateral lower i lateral lower incisors.
 - first molars.
- 18 to 20 months, 4 28 to 32 months, 4 second molars.

The symptoms of teething are temperature, distaste for food, drooling, and gastrointestinal disturbances. The ingenuity of the nurse is sometimes taxed to soothe a teething baby. A ring of hard rubber or ivory, or an old-fashioned wooden clothes pin, is easily kept clean and affords something hard on which to bite. When the teeth are very near the surface, they may often be rubbed through with a rough towel.

SWEAT GLANDS .- The sweat glands usually become active during the third to fifth week.

SALIVA.—The normal flow of saliva is much diminished during the first three or four months.

URINE.-Kidney functions begin early in fetal life, and the bladder is often found full at birth. The amount passed during infancy is relatively greater than that passed during adult life. An excess of uric acid stains the napkins red.

INTESTINAL DISCHARGES .- Meconium is found during the first three or four days to the end of the first week; then the movements gradually change from a dark green to a golden yellow when on breast milk. Normally there are two to four dejections a day. Meconium is sterile at birth, but infection quickly takes place through the mouth and rectum.

The normal stool in a breast-fed baby is a soft, smooth, golden yellow. The stool of a bottle-fed baby will depend entirely on the composition of the milk it is receiving. A milk too high in proteids will cause a stool with large, hard curds; too high in fat, small, soft curds, which when smoothed out have a greasy, soapy appearance and a sour odor. Stools may contain mucus, pus, and blood. The green color which sometimes appears is due to fermenta-

INTERTRIGO-(IRRITATION OF THE BUTTOCKS) .- This is caused by too frequent or too irritating stools, or by wet diapers. When caused by the latter, it is a nursing problem entirely, as relief of the condition demands that the baby be kept dry and that the diapers be changed as soon as wet or soiled. Soothing powders, corn starch, talc, etc., are often helpful as adjuncts to dry napkins.

Successful feeding of a baby is partly dependent on the nurse. A baby should be fed slowly, twenty minutes to a feeding. It should be fed regularly, at definite intervals, and, if on the bottle, stated amounts. The bottle should always be held, not propped against a towel and the infant left to its own resources. The milk should be heated to 100° F., and should fill the neck of the bottle, so that the infant will not get a mixture of milk and air.

Vomiting in the breast- or bottle-fed may be due to a variety of causes. Overfeeding quantitatively, too rapid feeding, overfeeding qualitatively, and moving about after feeding all tend to induce vomiting. Of the anatomical deformities which induce vomiting, stricture of the esophagus, pyloric spasm, and pyloric stenosis are the most common.

Gas and colic are problems which the nurse is often called on to solve. They may be caused by too rapid feeding, overfeeding, and improper food. Among the simple remedies which may be helpful are change of position; sometimes simply putting the baby in the upright position tends to dislodge the gas. Heat applied to the abdomen and abdominal massage are often effectual. Hot water in tablespoonful doses by mouth and a rectal soap suppository often help.

An infant should have a daily cleansing bath, preferably in the tub, temperature of the water 90° to 95° F. A mild castile soap should be used sparingly and the skin dried with a soft towel.

The mouth must receive constant attention. Before and after every nursing it should be wiped out gently with a saturated solution of boric acid on a piece of soft cotton or linen. Stomatitis, or sore mouth, is caused by dirty nipples, too hot milk (in the bottle-fed), prolonged feeding, seen especially in the bottle-fed where the child must manage the bottle, and in cases of general neglect. Pacifiers or blind nipples are a frequent source of stomatitis, causing also middle-ear disease, gas, and facial disfigurement.

Detroit Home Nursing Association.

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The Detroit Home Nursing Association, recently organized in that city to provide home nursing for people in moderate circumstances, has just issued a small booklet outlining its plans. Criticism of it is heard because it does not seem to altogether realize the hope entertained when this organization was outlined and proposed at the Detroit meeting of the American Hospital Association, two years ago, that something was to be done in reality for people in moderate circumstances. In the booklet just issued it is announced that prices for service will be the same as those in the local nurses' registries—namely, \$25 per week. The association proposes to furnish undergraduates of varying qualifications for from \$9 to \$16 per week, with day rates proportionately high.

In regard to the poor the booklet makes the following announcement:

"There being no fund on which to draw for the relief of families unable to pay for nursing or help, a new field of opportunity is open to churches, lodges, merchants, manufacturers, or friends to provide the means necessary for such service for their members, employees, or relatives."

It is difficult at first reading for the critic to see where this association offers any advantages over the ordinary commercial nurses' registries maintained in all the large cities and in connection with most hospitals, except perhaps that it is proposed to furnish under-graduate nurses; but they argue that under-graduate nurses are also available in the persons of the so-called "practical" nurses wherever they are needed, and the Detroit papers, just as the papers elsewhere, carry advertisements in the classified columns for women who are looking for these positions; so, "after all," they say, "the very much talked-of Home Nursing Association is, to the casual reader, little else than a directory for nurses.

It is reasonable, however, to believe there is more to the advantage of the class it is so much desired to help than is at first evident to the critics, for the originators make plain the fact that they propose to furnish workers for the particular need of the case—a graduate nurse when necessary, an attendant when necessary, or a household servant when she is required.

This association ought to accomplish good results because like schemes have been worked out elsewhere. Its success will depend largely on the degree of faithfulness in supervision and on the character of the attendants and helpers secured. One such organization, the Household Nursing Association of the Women's Municipal League of Boston, is known to have proved itself valuable to its community, but it has adhered strictly to its high standards of selection and supervision until now it proposes that its attendants shall have been trained as such before being sent into families.

It does not seem that the bottom has yet been reached in the consideration of illness among people of moderate means. Almost any plan proposed for them has a note of charity that is heard more or less clearly according to the zeal of the would-be benefactors, while the sick man and his family go their own way without fear or favor.

When the committee at work on a curriculum to be suggested to the American Hospital Association came to this question, and sought by every means within its power for a solution, a member suggested some form of insurance that should protect the people against disease and accident. It was then considered impracticable, and no insurance company could be found to take the risk, but that was four or five years ago and there had not been so much experience with "workmen's compensation acts" and "employers' liability acts," etc., as the last year or two have furnished.

It may transpire that, while associations are proposing and defending ways and means for the help of this great class, they, unconscious of the prominence they have attained, will take the matter into their own hands and solve their own problem as has always been their custom under other circumstances, "while all the world wonders" at the ease with which it is done.

Spring Meetings.

One has to give only a passing glance at the tentative programme prepared for the convention of the American Nurses' Association, to be held in St. Louis during the week of April 23 to 29, inclusive, to be impressed with the magnitude and power of this great organization, numbering more than 20,000 members. Efforts are being made to simplify the registration of delegates to the convention, thus preserving order and harmony, and giving undisturbed time to the sessions of the various branches of the association. It will also give an opportunity to reach large audiences in the city of St. Louis and to get them interested in the nurse and her problems. The committee having the programme in charge is wise in this, for the time has come when the nursing problems can no longer be kept within the hospital or its rather limited coterie of physicians and instructors.

A new and rather salient feature of the convention is the call for a mass meeting to be held on Sunday afternoon, April 26, in some large central place, where the clergy of all denominations, Jewish, Roman Catholic, and Protestants, may be able to unite under the leadership of a public-spirited man. This seems a great and uplifting step for the convention to make, which never has been possible before, because Sunday never has been included in the convention period. It is proposed to discuss at this meeting the place of religion in the life of the nurse from the standpoint of the representatives of the various denominations. It is also hoped that an outline of the work of the nursing organizations under these several denominations may be presented, and there will be letters from far-distant countries, such as China, Jerusalem, Labrador, etc.

The questions which are proposed most prominently for the programme are private nursing, registries or directories for nurses, state registration (which is to be treated in both retrospect and prospect), sections for head nurses—their relation to the training school, faculty, and the administrators of the hospital. There will also be a section devoted to food and feeding, both in health and in disease, as well as infant feeding. The work of the Red Cross will be discussed, as also the new work that nurses are doing. Round tables will be called for by members.

The National League of Nursing Education, formerly the Society of Superintendents of Training Schools, but now a section of the American Nurses' Association, proposes discussions and papers on some of the subjects already mentioned for the meetings of the main body, such as registration and registries, and in addition they are giving especial attention to the teaching in schools of nurses, standards of requirements for entrance to training schools, courses of study, institutional problems, etc. There are also joint meetings of this body with the American Nurses' Association and the public health nurses. The public health nurses have also their own individual programme and joint sessions with the other bodies.

It is not possible at this time to give an outline of their programme, but something very much alive and very interesting, not only to their special branch of nursing work, but to the public in general, will be presented. No more enthusiastic or enterprising body of workers can be found than this Public Health Nurses' Association, not quite two years old, but with all the proportions and symmetry of an adult body. Its growth and work may almost be counted one of the wonders of recent years.

Nurses' alumnæ associations, state associations, and other affiliated organizations, as well as individual nurses, gain much by attendance on one of these conventions; in fact, they can hardly afford to miss them. An enthusiasm and strength is given out by meeting and associating for one week with such a large number of women engaged in like work. The enthusiasm thus gained has carried many a toilful worker through an additional year. Anyone fortunate enough to be sent as a delegate can never have the same idea of her work, her associate workers, and their place in the world that she had before. She unconsciously holds her head a little higher in her walk through life, and has greater respect, if possible, for nurses and nursing work.

Each nurse should make attendance on one of these conventions the goal of an ambition—and why not this year?

Progress.

With the trained nurse of the first generation still in active practice, one is almost overcome by the contemplation of the progress made by the profession. Forty or fifty years is a short period of which to write a history, and yet that would practically cover the time trained nurses have been at work in this country.

The value of the first nurses was largely inherent; they were wonderful women, who might and doubtless would have made good nurses by reason of their breeding, intelligence, industry, courage, and love of humanity, but they had these traits greatly enhanced by their one or two years of training. It has been a privilege to have lived in the same age and to have touched the hems of their garments. From the small seed planted by them in the early 70's there has grown a great tree in which verily the fowls of the air may find lodgment. It has many branches, but none stronger or of more luxuriant growth than that we have learned to call the public health nursing. This phase of the work is at present attracting many of our brightest and best nurses, and we find ourselves wondering why. Perhaps the answer to the query may be found in the fact that thus do nurses find scope for that which is within them, which, when experienced, brings satisfaction and peace. They cannot be influenced by commercial reasons, because such are more plentiful in other lines of work.

Twenty years ago our superintendents of training schools were greatly concerned regarding the trained nurse's future. Times were hard for her; her ranks were increasing rapidly; the recompense for her services was

considered high; she was a luxury not to be indulged in without grave consideration; she was often without work because there were few calls for her, excepting for private duty. Then came a period of rejoicing at the many new avenues for work opening up for nurses, until today we find the reverse is true, and there is more work than workers, while we frequently hear expressions of alarm at the falling off in the relative number of nurses for private duty. So great has become the demand for nurses qualified to fill positions in some form of the public health service that the Boston Instructive District Nursing Association has decided to offer a four months' post-graduate course in instruction. Their circular says: "The course is designed to give a basis for the varieties of social work where nurses are in demand, and takes up the ordinary procedures in district and visiting nursing in all their branches, and deals with the educational and preventive aspects of the work." The variety of the field work, lectures, and class discussions shows the relation of nursing to other social activities. There is opportunity for practical work under instruction in the district work, preventive work for mothers and babies, and work with the associated charities, as well as instruction and experience in rural nursing.

The course as outlined appears exceedingly interesting, for it is noted that the instruction is carried on by means of classes, conferences, and excursions, and includes, with epportunities to observe, the history and development of school nursing, tuberculosis nursing, preventive work for babies, prenatal nursing, welfare work in shops and factories, hospital social service, and medical and social relation of disease, with the application of modern medical knowledge as applied by nurses in the prevention of disease, and elements of sociology and social progress, with introduction to the special social and industrial problems on which public health is dependent.

Interesting lectures and discussions are announced, and a library is maintained for the use of the students, who are required to do a definite amount of reading. Not only is the tuition free, but, in order to make it possible for nurses of limited means to take this course and meet their living expenses, a small number of scholarships are offered.

A course of such apparent interest is a rarity, and the nurses originating and having it in charge have done much to elevate the standards of nursing education in conservative Boston. Their influence has been felt for a long time, and its end is not yet. They are to be congratulated and bidden "godspeed" in this their latest enterprise.

San Francisco Meetings.

Arrangements for the meetings of the International Council of Nurses to be held in San Francisco, May 31 to June 6, 1915, are already in progress. They present many unique and interesting features, one of which cannot be announced too early. This refers especially to the exhibit to be prepared for the nursing section, for which two prizes of \$100 and \$50, respectively, have been offered by one of the older nurses for the best and the second best inventions by nurses of some implement or device that shall contribute directly to the welfare and comfort of the sick, or that shall aid in the ministrations to the sick. Another older nurse offers \$100 as a prize for the best contribution of some article or form to be designated later by the committee having the matter in charge.

It has always been the belief of the observant ones that

some attention should be paid the efforts and ingenuities manifested daily in the wards of our hospitals, but which are passed over by reason of the stress and push of the work. This is the nurse's opportunity, which it is hoped will be embraced and result in a sharp competition that shall bring special honors to some and credit to all nurses.

The Relief Fund and the Robb Fund.

There are two lines of work particularly interesting to nurses at the present time in which every one should have a part. These are the two committees working under the auspices of the American Nurses' Association known as the Relief Fund Committee and the Isabel Hampton Robb Memorial Fund Committee. The former, an enterprising, active committee, has collected by earnings, through the publication of calendars, subscriptions, and otherwise, a sum of money nearing the \$10,000 mark. It has for its object "to provide financial aid in time of emergency; to give relief to disabled members not otherwise provided for, and to establish a loan fund." The other fund, established in memory of Isabel Hampton Robb, is a fund for educational purposes, and has now reached a sum amounting to nearly \$14,000. This fund is carefully invested, and has commenced to be used for scholarships, there being granted during the year just ended scholarships to the amount of \$400, which has been increased to \$600 for the current year.

Collections for these funds are going on constantly, and, when one considers that work was commenced on the first of them less than four years ago and that most of the money has come from individual nurses, one is impressed with the enterprise and loyalty of these hardworking women.

The Life of Florence Nightingale by Sir Edward Cook.

The "Life of Florence Nightingale" is exceedingly timely in its appearance. Popular legend has pictured a young woman of high degree who withdrew from the pleasures of fashionable life to become the "ministering angel" of the Crimea. Only now, when her papers are accessible, does truth reveal a life built on larger lines and a work of more importance then belong to the legend. So aptly has her biographer chosen from her voluminous correspondence and so simply has he connected her letters, with only enough of the history of the day to place her work in its true light and to exhibit her characteristic methods, that one reader has repeatedly felt herself following an intimate autobiography. The inspiration which never forsook Miss Nightingale in her pursuit of the art of life has happily expressed itself in her letters.

Sir Edward Cook divides her life into seven parts: Aspiration (1820-1854), The Crimean War (1854-1856), For the Health of the Soldiers (1856-1861), Hospitals and Nursing (1858-1861), For the Health of the Army in India (1862-1865), Many Threads (1867-1872), and Work of Later Years (1872-1910).

In the earliest period Miss Nightingale purchased her birthright—her ideal of self-expression in work. As the author states, "the story of her earlier years is that of the building up of a character. It shows us a girl of high natural ability and of considerable attractions feeling her way to an ideal alike in practice and in speculation. In a way, the story of her earlier years is the history of a pioneer in the emancipation of women.

In the second part is traced the deep significance of her years in the Crimea; those brief years out of which grew many of her later activities in behalf of the British soldier at home and abroad, as a promoter of hospital reform, Red Cross societies, and as a founder of modern nursing.

In the third part the administrator and reformer shows her peculiar powers of resourcefulness. For the health of the soldiers, "her boys," she labored with incessant industry and devoted concentration. Her friendship with Lord Sidney Herbert, unique in the history of politics, revealed perfect sympathy with him in the service of high ideals.

As a religious thinker she was somewhat of a mystic, though she believed intensely in a personal God and in a personal religion. While the fourth part continues to describe her work as a hospital reformer and founder of modern nursing, it deals rather exhaustively with her ideas of God's laws.

And in the fifth division she is busily at work for three years to improve the health of the army in India. Tedious as much of the statistical preparation for the royal commission proved, she was unremitting in her campaign to secure government cooperation for new schemes and to enlist other reformers in the work. Three years of patient toil increases one's respect and admiration, for they are spent in a comparative solitude which is impressive.

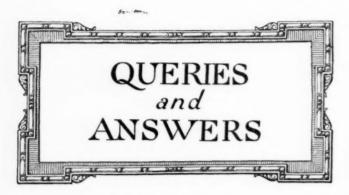
After 1862 she continued her Indian work, but other questions pressed upon her, notably the reform of workhouse nursing. The sixth part deals with her expert opinions and advice on every question of public health which in the next five years came before the Government. Her later years, from 1872 to 1910, were rich in reward, the fruit of earlier activity, and there was occasionally an important experiment, such as the one in rural hygiene.

As to her character, the author points to her own praise of a fellow worker for the last word: "One whose life makes a great difference for all; all are better off than if he had not lived; and this betterness is for always, it does not die with him—that is the true estimate of a great life."—MYRTLE YOUNG.

A London Hospital for Diseases of the Heart.

The new National Hospital was opened on January 21 with an appropriate program. His Royal Highness Prince Arthur of Connaught was present. For a number of years the old hospital was in Soho Square. The present building is in Westmoreland street, and covers an area of 5,000 square feet. In the cardiagraphic laboratory are to be seen the Cambridge string galvanometer, a Bock-Thoma oscillograph, and a Siemens cardiagraphic galvanometer, as well as a Boulitte pymograph and appropriate instruments for taking venous and arterial tracings and blood pressure.

The forty-fourth annual report of the Massachusetts Homeopathic Hospital contains the following information: There were treated in the wards of the main hospital 6,508 patients, with a daily average of 248.49; the out-patient department treated 12,411 patients and made 43,983 visits; 11,838 visits were made to district patients, and the district and social visits were 7,056; at the J. C. Haynes Memorial for contagious diseases 455 patients were treated, with a death rate of 4.2 percent; the receipts for paying patients in all departments were \$173,-148.14 and the expenditures in all departments were \$228,105.09; 998 maternity patients were admitted to the main hospital; the daily per capita cost of the main hospital was \$2.03, and the cost of the contagious department was \$1.61.



Water for Hospital Use.

To the Editor of THE MODERN HOSPITAL:

We are to build a hospital for 200 patients, with administrative preparation for a second pavilion for 100 private patients. We are to obtain our water from the city supply, which has an average pressure of about twenty five pounds; our architect is arranging for a 3½-inch intake pipe, with a tank on the roof to hold about 5,000 gallons. Some one has suggested that such a pipe is not large enough and that our tank is not large enough. Can you give us any advice on either or both points?

HOSPITAL, New York.

Let us talk about your completed hospital of 300 beds, because it is much easier and cheaper to have it right at first than to make additions afterward. Under average conditions, a 300-bed hospital will use about 200,000 gallons of water per twenty-four hours for purely hospital purposes, and, if you have a power plant and laundry and nurses' home, you will need 100,000 gallons more. A 4-inch pipe at twenty-five pounds will take in about 250,000 gallons in twenty-four hours, provided the use of the water is regular all the time. So your 3½-inch pipe would not take in enough under most favorable circumstances. But conditions of hospital use are not favorable; from 7 to 11 a. m. you will use approximately 15,000 gallons an hour, and at night you will use little or none, but you must provide for the maximum.

For your purposes you should have at least a 10,000-gallon roof tank, operated by two pumps under automatic control of a float mechanism in the tank—two pumps instead of one, because then they can operate synchronously, which will do away with the pounding in the house pipes so objectionable where one only is employed. You should feed your pumps not from the intake, but from a surge tank located close to the pumps, which will give them a certain freedom of action.

You should have a 4-inch pipe intake at the very least, and, if you can tap two different mains on different streets, each with a 3½-inch pipe, you will be far safer. It is surprising how often a city distribution pipe is out of commission. If you have access to two, each independent of the other, you will be absolutely safe so far as water is concerned. It is a terrible thing to be without water in a hospital, even to the necessity of drawing the fires in the power plant sometimes. Architects have no conception of these things—insist upon your point.

JOHN A. HORNSBY.

To Clean and Sterilize Test Tubes.

To the Editor of THE MODERN HOSPITAL:

I would like very much to have the experience of others as to the best way to clean and sterilize test tubes, and to keep the glass perfectly clean. Could you tell me how to do it?

E. L. K., Chicago.

It is safest to buy the best grade of test tubes, the ones made of what is known as "lead" glass, which is the glass made with the combination of potash and oxid of lead. This ware emits a clear, white light.

Two of Chicago's leading laboratories that make a specialty of culture tests, and clean and sterilize hundreds of test tubes daily, use the following method:

They use a boiler that holds eight to ten gallons of water (a wash boiler answers the purpose). The test tubes are placed in the boiler and five gallons of water are poured into the boiler. Then add one pound of genuine green oil soap to the five gallons of water, and boil for half an hour. The tubes are rinsed three times—the first time in warm water, and the second and third times rinsing can be in either warm or cold water. If the tubes are to be used for delicate and accurate chemical results, a precaution is taken by using an acid bath after the first rinsing. Place the tubes in a ½ percent solution of hydrochloric acid for a few moments, and then rinse off the acid thoroughly with tap water—some use the chromic acid cleaning mixture.

In hospital work it is not necessary to give the acid bath if green oil soap is used, as this soap has the peculiar properties of leaving the tubes clear and bright. Use the test tube brush to aid in rinsing. Even one rinsing in warm water is sufficient to make the glass clear and clean. Dry the tubes in the hot-air sterilizer.

If a hard or soda soap, soap powder, sal soda, or neutral soda is used to boil and sterilize the tubes, it is necessary to give the tubes an acid bath to remove the sodium carbonate that clings to the glass, which gives the dull gray appearance to the tubes and may affect the culture media.

To Take Stains From Laundry Goods.

To the Editor of THE MODERN HOSPITAL:

What is the most efficient method for removing stains from linen, prior to disinfection, that under some conditions, particularly when stains are caused from milk, tend to become set if not removed prior to disinfection?

J. W. T., Boston.

It is important to either change the chemical character of the stain, or else entirely remove it before disinfection, to prevent the possible setting of the stain by the disinfectant used. A mild neutral soda bath for the linen will come the nearest to meeting this condition.

Each kind of stain on linen has its own method of removal. Fruit stains should be dissolved with boiling hot water; coffee and milk spots, if bad, should be washed out with soap and water; ink stain spots soaked for an hour or two in cream or buttermilk and then the milk washed out; blood stains soaked in cold water and rinsed out.

In addition to these treatments, to be on the safe side and catch all milk spots, etc., all the linen should be immersed in cold water in which has been dissolved 2 ounces of Kelsoda crystals or Wyandotte soda for each gallon of water used; let the linen remain ten to twenty minutes; rinse once and then disinfect.

If you do your own laundry work and will follow the method given below, there will be few stain spots on the linen. The important points to watch in laundry work are:

- 1. Do not overload the machine with goods; it takes from nine to eleven minutes for the inside piece to work to the outside of the machine; if overcrowded, it never comes out and is never clean.
- 2. Do not put hot water or soap suds in the clothes first; some stains are set by hot water and soap.
 - 3. Do not use cheap soaps; to loosen all stains, except

iron rust, the clothes should have a weak neutral soda cold bath for ten minutes first.

The following rule should be followed for machine washing:

Put in a moderately sized load of clothes and add cold water until you have four inches of water in the inside cylinder. If it is artesian or very hard water, add 3 pounds—if lake or soft river water, only 2 pounds—of either Wyandotte soda or neutral Kelsoda crystals. Dissolve the soda in a pail of water first; run the machine ten minutes, and discharge all the water. Refill the machine with warm or hot water up to three or four inches in inside cylinder; add enough soap to make good suds, gradually bring to boiling, and run for twenty to thirty minutes. Discharge the soap suds and rinse the goods in the usual way.

The quickest method to remove stains and whiten clothes, and also in the end the most expensive, is the use of the chloride of lime solution or bleach. Your laundryman knows how to make this bleach and use it. Good laundries that have the interest of their customers at heart do not use this bleach, but use good soap and good neutral soda. Iron rust stains require a special oxalic acid wash—quite tedious work, and a great deal of care.

The annual meeting of the Vancouver (B. C.) General Hospital was held on the evening of February 11 in the assembly hall of the new wing of the hospital. The meeting was one of the largest attended on record. Splendid reports were given by the chairman of the Board of Directors, the treasurer, the presidents of different auxiliaries, and the general superintendent. The meeting was particularly representative, there being delegations from all the organizations in the city and from outlying municipalities. Mayor Baxter gave a most appropriate address, eulogizing the work of the hospital and pointing out the rapid development from its inception in 1902, when the total number of beds was 45, with a staff of 28, which today is a hospital of 424 beds and a staff of 205. Attention was also called to the fact that this hospital has turned over \$75,000 worth of charity work during the year, and that the per capita cost was \$2.11 a day, being considerable less than other similar institutions in Canada. Praise was given the high efficiency of the work during the year. After the meeting lunch was served, the people then proceeded to inspect the building and equipment, and after this tour of inspection a dance was given by the superintendent and residence staff at the doctors' new residence.

The county commissioners and township trustees of Lebanon, Ind., have just closed a contract with Williams Hospital at Lebanon by which the hospital is to care for whatever public charges may be sent to it, at the following prices: Ordinary medical cases, per week, \$8; typhoid fever, obstetrical, and surgical cases, per week, \$70; laundry, per week, each patient, 50 cents; operating room fee, \$3. It is agreed that no tuberculosis, cancer, or communicable cases are to be sent to the hospital under this contract. On the other hand, the commissioners and township trustees are to designate the physician to take charge of all charity cases, and such physician shall have access to the hospital and its services at all times. This contract is of interest because the fees allowed the hospital under it are somewhere near representative of the actual cost of maintaining this class of cases in a small, rural hospital. Most contracts of this sort provide for fees only about half the actual cost.

HINTS FOR HOSPITAL SUPERIN-TENDENTS.

A device is used in European and English hospitals to save gas. It is the ordinary laboratory pilot light located at the burner, with an automatic arrangement by which the gas is turned up when a utensil, such as a kettle, is set on the plate, and which again automatically shuts off when the utensil is lifted away.

Dr. Richard C. Cabot has this to say in the January Atlantic Monthly: "Merely from the point of view of success in teaching, it is folly not to know those whom we are trying to teach. I have often found that after a man has given me the opportunity to learn something of his personal life, his home and family, his hopes and forebodings, he begins to do better work in class. Such improvement goes to show that we never get the best out of people so long as we treat them as a class, ignoring the unique interest and value of each individual." This human touch, the appreciation of the personality of every individual with whom one comes into contact, is just as important in the business or hospital world as in teaching.

English hospitals use stout brown paper instead of rubber sheeting for the dressing of very bad pus cases, the paper being burned immediately afterward. This same kind of paper is used in slum work to place between the too scanty bed coverings to hold the heat of the body. It is very probable that this method will eventually be adopted in this country for the reason that a well-known company manufacturing paper specialties has perfected a specially prepared paper which is now being introduced to the hospitals. This paper is made up in two grades, one as a bandage and one as a sheeting. The paper is waterproof and will cost about 50 percent less than the usual bandage.

When you see your surgeons putting all their strength against a strand of catgut in an attempt to tie it tightly, and then hear them quarrel at the hospital because the gut breaks, just remind them that the best surgical advice is that more sloughs and more stitch abscesses are made by cutting off the blood supply in the tight tying of sutures than in any other way. They know, or should know, that the best surgical experience teaches deftness in the gentle approximation of the lips of the wound, rather than tight tying and "puckering" of the line of suture. Catgut was never intended to test the strength of the surgeon, and the test of the virtue of catgut is not one of mere tensile strength.

When planning for a hospital, urge the board to consult with the medical staff members. Not one doctor in a hundred can read blue prints, so the plans will have to be gone over with the architect and explanations will be required. Board members are usually trying to do the best they know how, but they know so little about their business as a rule that they often are not aware that the various service members of the medical staff could give them a good deal of help in planning the various parts of their building. Doctors may not know how to amend plans, but they can tell the architect what they want and help him immensely. As a usual thing, the criticisms of the doctors come only after the building is well under way, when they can see what they are going to get, and when it is entirely too late to make any changes. If the doctors were consulted the first thing, many an extra would be saved, and consequently many a dollar.



Fig. 1. Philippe Pinel in the Salpetrière, Paris, 1793.

Solitary Confinement and Idleness Have Given Way to Occupation and Companionship-Shackles and Prison Bars Are Banished.

Who shall say whether recent medical changes in the care and treatment of the insane, defectives, cripples, and the otherwise helpless are due in greater degree to modern humanitarianism, or to a better knowledge of the cause,

OLD AND NEW WAY OF CARING FOR THE INSANE. young men who applied for enlistment in the army was greatly on the increase; a fuller inquiry, however, revealed the further fact that this increase dated from the initiation of the Wassermann and Noguchi tests, and that there were not more cases, but that a better diagnosis was made, and that cases which had eluded admission medical officers in the past were now diagnosed. Who shall say that the case is not the same with insanity, and that persons who were formerly merely "queer," or who were "conjured" or "bewitched," were not insane?



Fig. 2. Insane department in a county almshouse.

course, and cure of disease? In any event, methods that were permissible only a few years ago are no longer tol-

It is said that insanity and correlated conditions are on the increase by giant strides, and some radical experts and statisticians have gone so far as to say that all mankind is going mad.

A short time ago it was ascertained that syphilis in

The evolution in the care of these helpless people must be a most interesting study to hospital workers and thinkers. The National Committee for Mental Hygiene has led the way in these studies, and has published some excellent illustrations on the "before-and-after" principle. We are reproducing some of these illustrations.

The first illustration shows the court yard of a "madhouse," the celebrated "Salpetrière" of Paris, in 1793, dur-



Fig. 4. Occupation and companionship at the Manhattan State Hospital.

ing a visit by Philippe Pinel, one of the first physicians to deserve the appellation of "friend of the insane."

Fig. 2 illustrates a day room in the negro quarters of the insane section of a county almshouse.

Fig. 3 illustrates the old method of treatment of the insane, "Silence and the solitary." And it was expected to restore this woman's mind in this way. No words could

add to the pathos, not to say horrors, of these three pictures.

Figs. 4 and 5 are the modern way. These pictures need no further comment, except that it might be wished that the humanitarianism indicated, and the sound scientific principles involved in this treatment of the insane were not too frequently married by brutality on the part of



Fig. 5. Day room in a modern state hospital.



Fig. 3. Silence and the solitary

attendants, made possible by negligence on the part of administrators, coupled with the Pharisaism and hypocrisy of modern civil service.

NURSING COMMITTEE ASKS QUESTIONS.

Recent Meeting in New York Decides to Put Grading of Nurses Up to Hospital People-Series of Problems Propounded.

It will be remembered that at the Boston meeting of the American Hospital Association a committee that had been appointed the previous year to consider and report on a proposed scheme for the grading of nurses made a majority and a minority report. There was much discussion of the subject, and the committee, after being enlarged by the addition of two "superintendents of large hospitals," Dr. Howell and Dr. Mann, was sent back to report to the St. Paul meeting. This committee held its first meeting at Buffalo on January 13th and 14th. A series of ten questions has been sent to all the members of the association, asking that replies be sent to Dr. R. R. Ross, Buffalo General Hospital, not later than April 15th. The questions follow:

1. In your opinion, is it possible to meet the nursing needs of the average community in city, town, and country in the United States and Canada with graduate nurse

2. If in your opinion only graduate service should be used, will you kindly present an outline of a practical, comprehensive program for supplying graduate service to all classes needing continuous nursing

3. If more than one grade of nurse is a necessity, will

3. If more than one grade of nurse is a necessity, will you please state how many grades you consider necessary? How would you classify nurses so as to include in your classification all who nurse for hire?

4. Will you kindly suggest a substitute term for the grade B or "certified nurse," as recommended by the committee on grading of last year, if you consider that some better term should be used to designate nurses trained in special hospitals or hospitals unable to give a full training? Please state whether or not you are satisfied with ing? Please state whether or not you are satisfied with the distinctive terms recommended by the committee of last year. Give briefly your reasons if not satisfied.
5. If several grades seem to be necessary, how and

where should the several grades be trained?
6. In view of the fact that many tuberculosis hospitals find it impossible to secure sufficient graduate nurses to care for their patients, what measures would you suggest for meeting the nursing needs in such institutions?

7. If training is given in a tuberculosis hospital, how

long should the course be and how would you classify those completing such a course?

8. In view of the fact that there is a constant and pressing demand for maternity nurses in homes of moderate means, what measures that are practicable for the average community would you suggest for meeting this

need—how classify such nurses?

9. What constructive recommendations would you make with a view to improving on the plans presented by the committee on the grading of nurses in the report sub-mitted to the association at the Boston convention, a copy of which was mailed to each member?

10. Will you kindly suggest to the committee of this year any feasible plans which occur to you for improving the quality of home nursing now being received by those

who cannot afford graduate nurses?

THOMAS HOWELL, M. D. WILLIAM O. MANN, M. D. CHARLOTTE A. AIKENS. IDA M. BARRETT. EMMA A. ANDERSON. R. W. BRUCE SMITH, M. D. RENWICK R. Ross, M. D. Committee.

PHILADELPHIA'S FAR STEP FORWARD.

Central Hospital Bureau to Be Inaugurated With Skilled Heads to Aid All Hospital Activities.

A movement recently instituted in Philadelphia promises to increase the efficiency of the hospitals in that city to a very great degree. A number of physicians, under the leadership of Dr. Edward Martin, chairman of the committee, and Dr. Joseph S. Neff, director of public health and charities, have created a permanent organization, and have engaged the interest and cooperation of sixty-five hospitals for the study of hospital conditions and the formation of a hospital bureau, to cover the following points:

1. To place within the reach of every hospital and dispensary the latest information in regard to hospital organization, management, construction, and equipment.

2. To maintain a central purchasing agency that (a) will make the necessary tests and establish standards of quality and price for the medical, surgical, and household supplies ordinarily used in our hospitals; and (b) to enable every hospital-large or small-to save the money now wasted in purchasing supplies without a full knowledge of standards, prices, and current market conditions. The present annual cost of maintaining our hospitals is about \$4,000,000, and nearly one-half of this amount is spent for supplies.

3. To develop a community program for the hospital work of Philadelphia with a view to preventing the unnecessary duplication of expensive equipment and the overlapping of work that have proved so wasteful under

the present system.

4. Acting in an advisory capacity to aid individual hospitals in their efforts to increase their own efficiency and to make the best use of the funds intrusted to their

The proposed central hospital bureau, with its skilled organization, complete hospital information, modern systems of investigation and record, staffs of expert accountants, auditors, and purchasing agents-all at the service of each hospital-will make it possible for the smallest institution to be conducted with the same decision and skill as the largest, and for all of them to effect a great saving in their expenditure of time and money and human effort.

The committee expects that it will have the cooperation and the support of every business man who is either a trustee of or a large contributor to any of the hospitals in Philadelphia.

The Long Island College Hospital at Brooklyn is to have a five-story building to cost \$200,000.